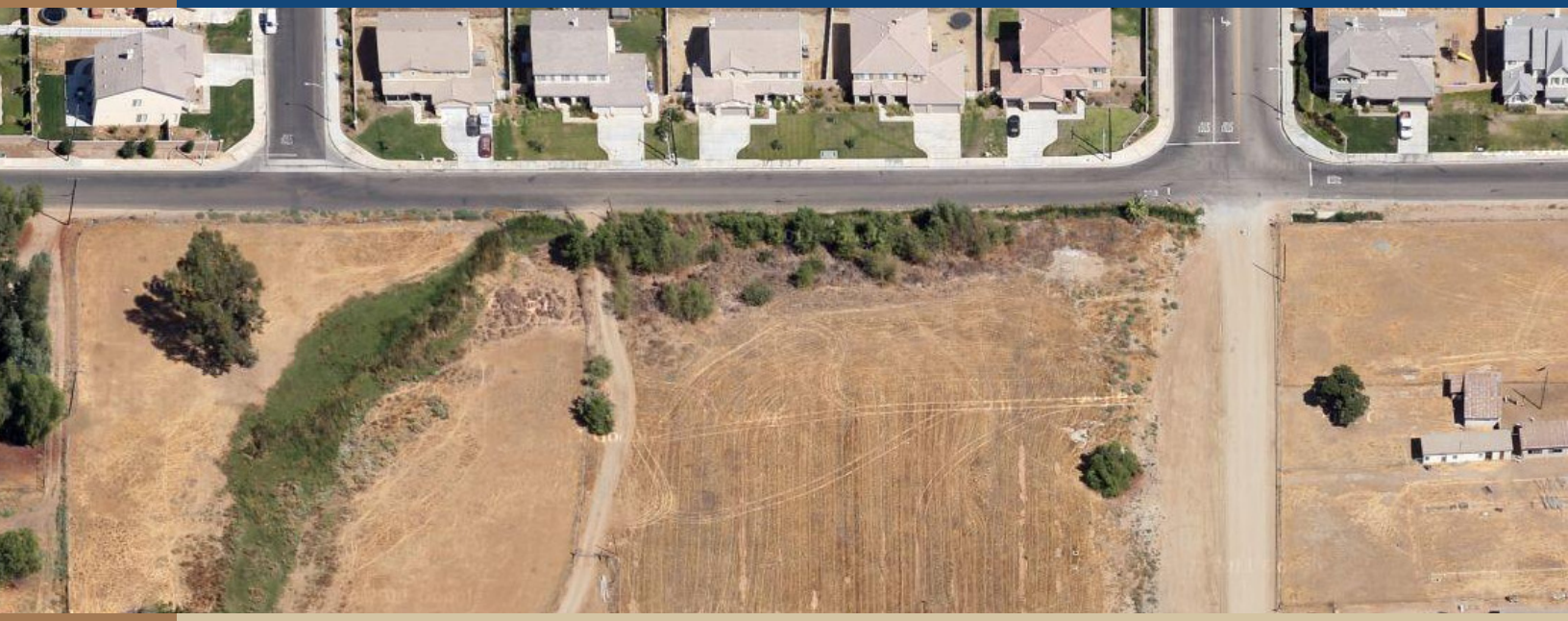
Initial Study/
Mitigated Negative Declaration

Cole Avenue Storm Drain Project



City of Riverside
Public Works Department

March 2012

Albert A. Webb Associates

Draft Mitigated Negative Declaration

WARD: 4

1. **Case Number:** EPW-12-001

2. **Project Title:** Cole Avenue Storm Drain

3. **Lead Agency:** City of Riverside
Public Works Department
3900 Main Street, 4th Floor
Riverside, CA 92522

4. **Contact Person:** Edward Lara, P.E.
Phone Number: 951-826-2337

5. **Project Location:** The proposed Project is an underground storm drain traversing tracts 30756 and 31362 along portions of Lurin Avenue, Cole Avenue, Estancia Drive, Lost Grove Drive, County Rose Drive, and Estrella Hills Street located within the City of Riverside, Riverside County, California. An earthen low-flow drainage ditch will extend approximately 300 feet south of Lurin Avenue at the proposed pipeline outlet. (**Figure 1 – Vicinity Map, Figure 2 – Proposed Project**). The proposed Project is located in Section 29, Township 35, Range 4 West, Riverside East quadrangle, San Bernardino Base and Meridian (**Figure 3 – USGS Topography**).

6. **Project Applicant/Project Sponsor's Name and Address:**

Public Works Department
3900 Main Street, 4th Floor
Riverside, CA 92522

7. **General Plan Designation:** Medium Density Residential

8. **Zoning:** R-1-10500

9. Description of Project: The proposed Project will construct approximately 2,500 linear feet of storm drain improvements between Krameria Avenue to the north and Lurin Avenue to the south as well as an earthen low-flow drainage ditch extending 300 feet south of Lurin Avenue (**Figure 2 – Proposed Project**). The proposed storm drains will convey runoff from the surrounding residential developments and discharge to a proposed outlet structure to be located on the south side of Lurin Avenue approximately 400 feet west of Cole Avenue. From there, flows will be directed towards a proposed low-flow earthen drainage ditch that runs southwesterly approximately 300 feet from Lurin Avenue.

10. Surrounding land uses and setting: The majority of the Project is within existing streets and ultimately drains to a natural wash southerly of Lurin Avenue, just west of Cole Avenue. Currently, there are no storm drain systems except two culvert crossings on Lurin Avenue. Several of the street intersections flood during moderate storm events, especially the intersection of Cole and Lurin Avenues. The two existing culverts are located in

Lurin Avenue on either side of the intersection with Cole Avenue. These culverts and their catch basins are shallow. The easterly catch basin also receives much of the local runoff from the watershed and often has standing water within the basin as the majority of the flow spills over the crown of Lurin Avenue and inundates the adjacent areas to the south street side. The flows from the easterly culvert are directed to the same location where the westerly culvert outlets via an existing earthen ditch along the south street side. The length of the ditch is approximately 380 feet.

Elevation ranges from approximately 1,683 to 1,694 feet and soils are comprised of Monserate sandy loam, 0 to 5 percent slopes and Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded. Riparian habitat dominated by willows is located south of Lurin Avenue.

Adjacent Existing Land Use:
North: Medium Density Residential
East: Low Density Residential
South: Low Density Residential and Very Low Density Residential
West: Low Density Residential and Medium Density Residential

Adjacent zoning:
North: R-1-7000
East: R-1-10500
South: R-1-13000 and OSP-RA
West: R-1-10500 and R-1-1/2 acre

11. Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreement.):

a. California State Water Resources Control Board (SWRCB): National Pollutant Discharge Elimination System (NPDES) Construction Permit

12. Documents used and/or referenced in this review:

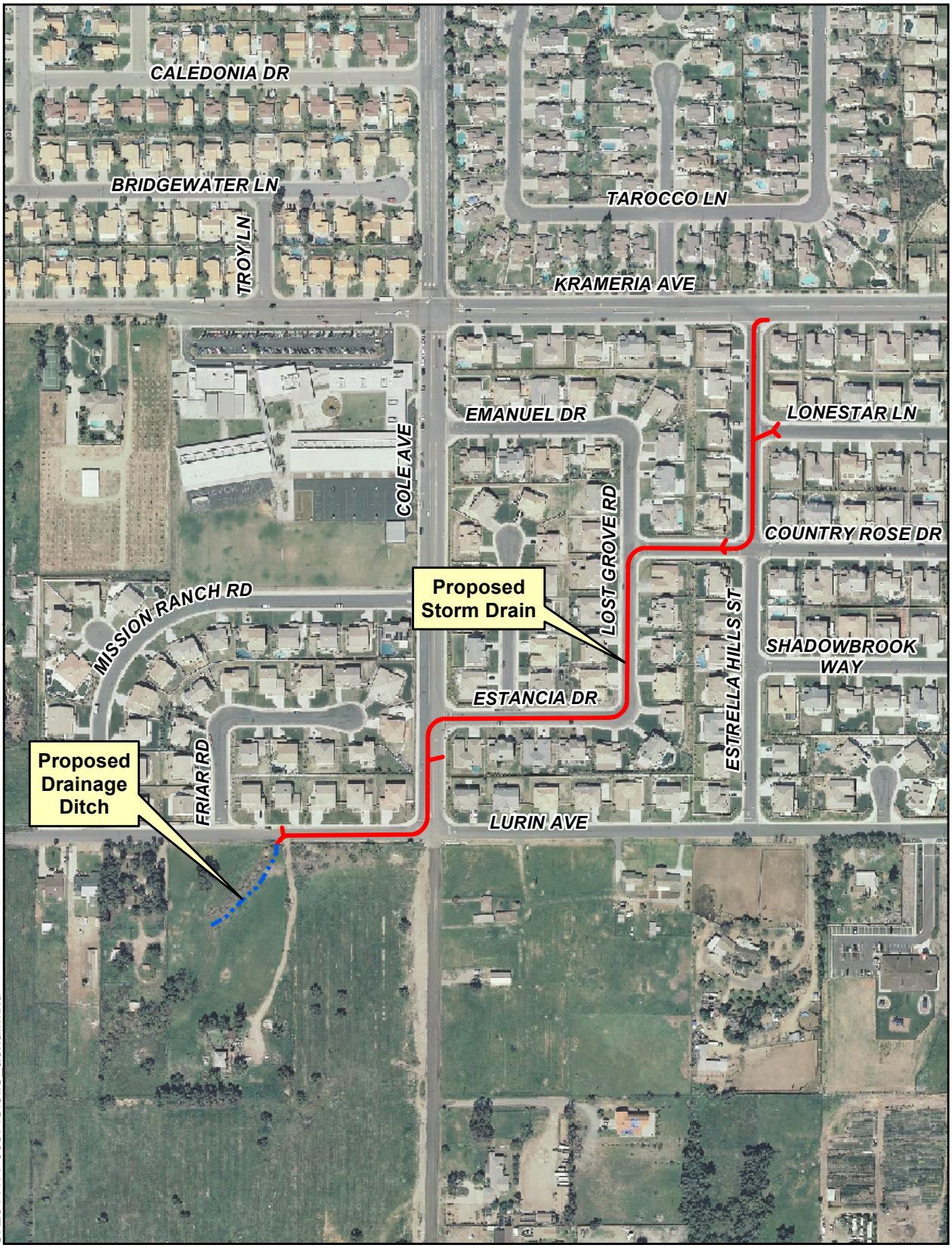
a. General Plan 2025
b. GP FPEIR

13. Acronyms:

APN	Assessors Parcel Number
AQMP	Air Quality Management Plan
BMPs	Best Management Practices
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
DBESP	Determination of Biological Equivalent or Superior Preservation
GHG	Greenhouse Gas
GP FPEIR	GP 2025 Final Programmatic Environmental Impact Report
GP 2025	General Plan 2025
LST	Localized Significance Threshold
MSHCP	Multiple Species Habitat Conservation Plan
NPDES	National Pollutant Discharge Elimination System
SCAQMD	South Coast Air Quality Management District
SCAB	South Coast Air Basin
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
WUS	Waters of the United States

Figure 1. Vicinity Map

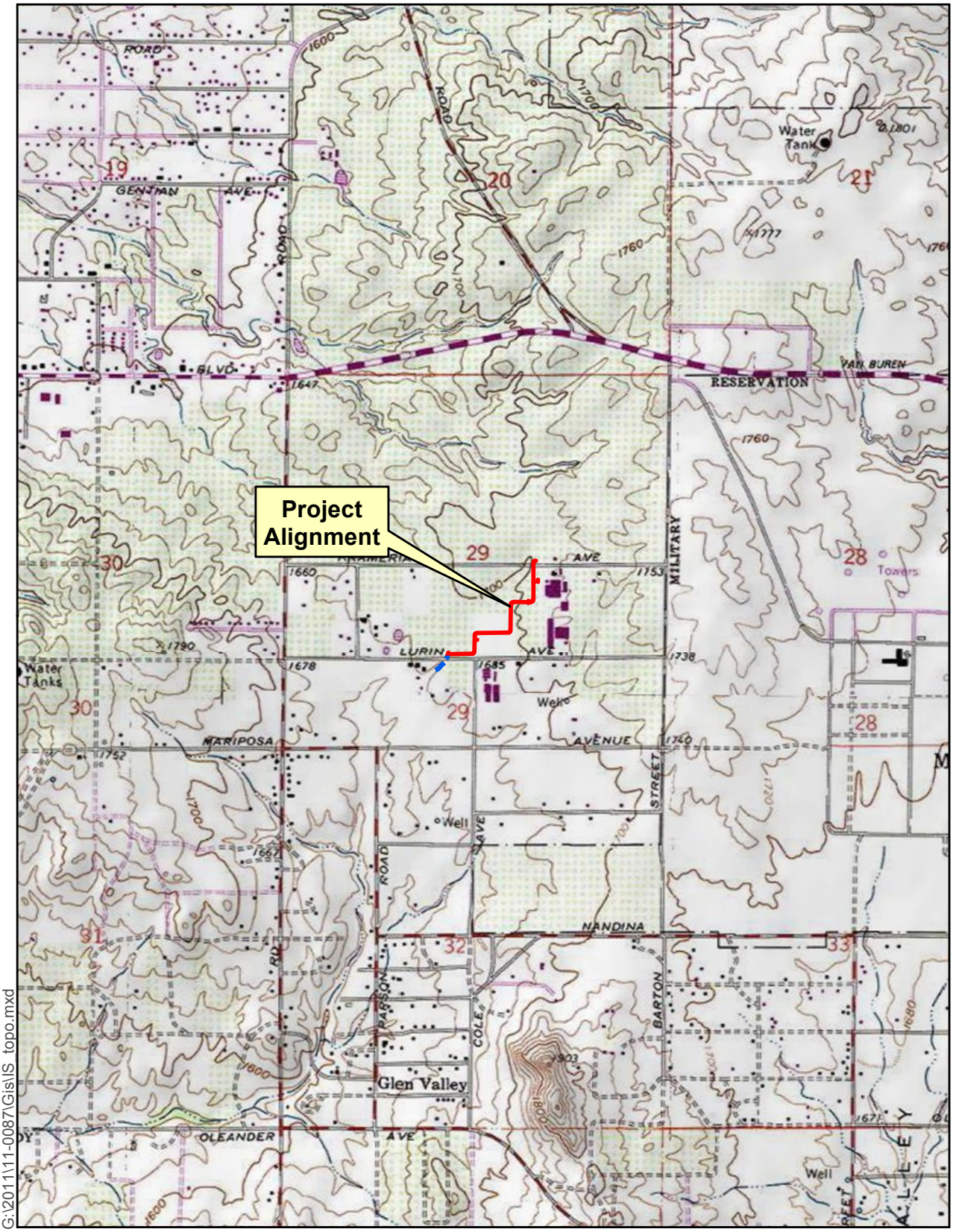
Cole Avenue Storm Drain



Sources: County of Riverside GIS, 2011; Eagle Aerial, April 2010.

Figure 2. Proposed Project
Cole Avenue Storm Drain

0 200 400 600 Feet



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Sources: ESRI / USGS 7.5min Quad DRGs:
RIVERSIDE EAST / STEELE PEAK

Figure 3. USGS Topography

Cole Avenue Storm Drain

0 1,000 2,000 3,000
Feet

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture & Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation which reflects the independent judgment of the City of Riverside, it is recommended that:

The City of Riverside finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

The City of Riverside finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

The City of Riverside finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

The City of Riverside finds that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

The City of Riverside finds that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. ☐

Signature Edward Lara Date March 13, 2012

Printed Name & Title Edward Lara, P.E., Senior Civil Engineer For City of Riverside

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a. **Earlier Analysis Used.** Identify and state where they are available for review.

   b. **Impacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c. **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measure which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) The explanation of each issue should identify:

   a. the significance criteria or threshold, if any, used to evaluate each question; and

   b. the mitigation measure identified, if any, to reduce the impact to less than significance.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. **AESTHETICS.** Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
1a. Response: ***(Source: Project Description; GP 2025, p. OS-4 and Figure PR-1 Parks, Open Space and Trails)*** Construction of the proposed Project could have short-term visual impacts from construction equipment and construction activity. The Project is not near any scenic vista. The closest are Sycamore Canyon Wilderness Park and Box Springs Park, which are several miles away. Further, the proposed storm drain improvements will be located at or below ground surface, and as such, will not be a visual impact. Therefore, Project implementation would not obstruct any scenic views and would result in **no impacts**.				
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
1b. Response: ***(Source: Project Description; GP 2025, p. HP-10 and Figure CCM-4 Master Plan of Roadways; Caltrans)*** The proposed storm drain improvements will be located at or below ground surface within the road rights-of-way. The Project would not damage scenic resources of rock outcroppings or historic buildings within historic districts or neighborhood conservation area that are of significant visual quality. No resources would be displaced as a result of the construction of the Project. Additionally, the Project is not located on or within the vicinity of a scenic boulevard and the Caltrans Scenic Highway System does not identify any state highways within Riverside County that are in the vicinity of the Project. Therefore, **no impacts** to any scenic resources will occur.				
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
1c. Response: ***(Source: Project Description)*** See response to items 1a. and 1b., above. The proposed storm drain improvements will be located at or below ground surface within the road rights-of-way. Additionally, riparian vegetation within the Project area would be avoided. Therefore, **no impacts** to the existing visual character of the site will occur.				
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
1d. Response: ***(Source: Project Description)*** The proposed Project does not include installation of street lights and will not alter the existing lighting in the area. Further, as stated in 1b, this Project is underground and, therefore, **no impacts** will be caused by light or glare.				
2. **AGRICULTURE AND FOREST RESOURCES:**				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effect, lead agencies may refer to information complied by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and	☐	☐	☐	☒

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Monitoring Program of the California Resources Agency, to non-agricultural use?				
2a. Response: ***(Source: GP 2025, Figure OS-2 – Agricultural Suitability; FMMP 2008)*** The storm drain improvements are not located within mapped Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. According to the *GP 2025*, the proposed Project is mapped on Farmland of Local Importance. However, the results are based off of the California Department of Conservation Farmland Mapping and Monitoring Program 2004. The Farmland Mapping and Monitoring Program did an update in 2008, listing the proposed Project area as built-up land. Therefore, the proposed Project will not affect existing agricultural operations or mapped "Farmland." **No impacts will occur.**				
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
2b. Response: ***(Source: GP 2025, Figure OS-3 - Williamson Act Preserves)*** See response to item 2a., above. According to Figure OS-3, the Project is not located within a Williamson Act contract area. The site is also not zoned for agricultural use. **No impacts** will occur.				
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
2c. Response: ***(Source: GP 2025,Figure OS-5 – Habitat Areas and Vegetation Communities)*** "Forest land" is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. "Timberland" means land, other than land owned by the federal government and land designated as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. According to Figure OS-5, no forest land or timeberland is located within the Project vicinity. The Project area is within a residential community; therefore, the Project will not conflict with existing zoning for, or cause rezoning of, forest land. **No impacts** will occur.				
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
2d. Response: ***(Source: GP2025, Figure OS-5 – Habitat Areas and Vegetation Communities)*** See response to item 2c., above.				
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
2e. Response: ***(Source: GP2025, Figure OS-2 – Agricultural Suitability, Figure OS-3 -- Williamson Act Preserves, Figure OS-5 – Habitat Areas and Vegetation Communities)*** See responses to items 2a. through 2d, above.				
3. **AIR QUALITY.**				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
3a. Response: ***(Source: South Coast Air Quality Management District's 2007 Air Quality Management Plan (SCAQMD 2007))*** The Air Quality Management Plan (AQMP) for the South Coast Air Basin (SCAB) sets forth a comprehensive program that				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

will lead the SCAB into compliance with all federal and state air quality standards. The AQMP's control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections.

Since the proposed Project consists of storm drain improvements that in and of itself will not result in any changes to the existing land use patterns in the Project area, the Project does not conflict with or obstruct implementation of the AQMP. **No impacts** will occur.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

3b. Response: ***(Source: Appendix A, Air Quality Analysis Supporting Information prepared by Albert A. Webb Associates, 2011(AAW 2011a))***

Air quality impacts can be described in a short- and long-term perspective. Short-term impacts will occur during site grading and Project construction. Long-term air quality impacts will occur once the Project is in operation. Operational emissions would only be from the infrequent visits by vehicles driven by maintenance personnel and are considered negligible; therefore, only short-term construction impacts were evaluated.

Short-term emissions were evaluated using the CalEEMod version 2011.1.1 computer program (AAW 2011a). Short-term emissions consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Maximum daily emissions from Project construction are summarized below and compared to the South Coast Air Quality Management District's (SCAQMD's) daily regional thresholds:

Estimated Daily Construction Emissions

Activity	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Construction maximum	3.94	32.57	18.39	0.03	3.93	2.80
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Evaluation of the above table indicates that the maximum daily criteria pollutant emissions from construction of this Project are below the SCAQMD daily regional thresholds. The short-term emissions also do not exceed SCAQMD's localized significance thresholds (LST) either, as contained in Appendix A. Therefore, the Project will not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Impacts are considered **less than significant**.

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐

3c. Response: ***(Source: AAW 2011a; CARB)***

The portion of the SCAB within which the proposed Project is located is designated as a non-attainment area for NO_2 under state standards and for ozone, PM-10, and PM-2.5 under both state and federal standards. Since the proposed Project is in conformance with the AQMP and the Project's short-term and long-term emissions do not exceed the SCAQMD established thresholds of significance, the Project's net increase in criteria pollutant emissions for which the Project region is non-attainment is not cumulatively considerable and impacts are considered **less than significant**.

d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

3d. Response: ***(Source: AAW 2011a)***

As described in AAW 2011a (Appendix A), the closest sensitive receptors are the existing residences adjacent to Project alignment. To ensure a worst-case analysis, the sensitive receptor position of 25 meters (85 feet) was used.

Short-term emissions will be generated in the Project area during construction of the Project and have been found to be less than significant (AAW 2011a). In addition, the operational emissions were also found to be less than significant, as indicated above, hence the Project will not expose sensitive receptors to substantial pollutant concentrations. Impacts are considered **less than significant**.

e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3e. Response: ***(Source: AAW 2011a)***

The Project presents the potential for generation of objectionable odors during construction to the immediate vicinity of the Project site from diesel exhaust. Odors generated during construction/grading will be short term and not result in a long-term odorous impact to the surrounding area.

Sensitive receptors include existing residential uses adjacent to the proposed alignment**.** Recognizing the short-term duration and quantity of emissions in the Project area, the Project will not expose substantial numbers of people to objectionable odors. Impacts from short-term construction odors are considered **less than significant**.

4. **BIOLOGICAL RESOURCES.** Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

4a. Response: ***(Source: AMECa, AMECb, AMECc)***

The proposed Project will construct storm drain improvements between Krameria Avenue to the north and Lurin Avenue to the south on Cole Avenue along portions of Estancia Drive, Lost Grove Drive, County Rose Drive, and Estrella Hills Street. These improvements will convey runoff from the surrounding residential developments and discharge to a proposed outlet structure to be located on the southerly side of Lurin Avenue approximately 400 feet westerly of Cole Avenue. The majority of the improvements will be located within existing and improved roadways. The only portion of the Project having the potential to impact biological resources is located on the southerly side of Lurin Avenue within Assessor Parcel Numbers (APN) 266-140-006 and 266-160-001.

A Habitat Suitability Assessment, Jurisdictional Delineation Report, and a Determination of Biological Equivalent or Superior Preservation (DBESP) Report were completed by AMEC Earth and Environmental, Inc. (AMEC) to evaluate potential impacts upon biological resources resulting from the proposed Project. These surveys included general biological analysis, evaluations of jurisdictional waters and wetlands, and riparian/riverine habitat. Copies of these reports are contained in Appendix B of this Initial Study.

The Project is located within the Lake Mathews/Woodcrest Area Plan of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). However, the Project is not located within a Subunit or Criteria Cell of the Area Plan. The Project is located within the burrowing owl survey area, but no other survey areas of the MSHCP.

According to the Habitat Suitability Assessment, no special-status species were observed during the survey; however, the riparian habitat dominated by willows (southern Willow Scrub) located south of and adjacent to Lurin Avenue is suitable for least Bell's vireo (*Vireo belli pusillus*) and southwestern willow flycatcher (*Empidonax trailli extimus*), both federal- and State-Endangered species. There are no suitable burrows or burrowing animals present, so there is no suitable habitat for burrowing owls (*Athene cunicularia*) present. Additionally, adjacent properties include developed and disturbed lots

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

unsuitable for burrowing owls and other special-status species (AMECa, pp. 2 and 3).

Through implementation of the following mitigation measures (**MM Biology 1 and 2**), potential impacts to least Bell's vireo, southwestern willow flycatcher, and other nesting birds and their habitat will be **minimized to less than significant**.

MM Biology 1: In order to avoid impacts to least bell's vireo and southwestern willow flycatcher, construction along Lurin Avenue shall be completed outside of the nesting season of mid-March through August. If site-preparation activities are proposed during the nesting/breeding season (mid-March through August), a focused protocol survey shall be conducted within suitable habitat by a qualified biologist prior construction, to determine if least Bell's vireo and southwestern willow flycatchers are present in the construction zone. If birds are not located within the riparian habitat adjacent to Lurin Avenue construction may be conducted during the nesting/breeding season. However, if birds are detected, construction along Lurin Avenue shall not occur from mid-March to August.

MM Biology 2: In order to avoid violation of the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, construction along Lurin Avenue shall not occur during the nesting season (generally February 1 to August 31) of potentially occurring native and migratory bird species.

If construction activities are proposed during the nesting/breeding season (February 1 to August 31), a pre-activity field survey shall be conducted within suitable habitat by a qualified biologist prior construction, to determine if active nests of species protected by the MBTA or the California Fish and Game Code are present in the construction zone. If active nests are not located within riparian habitat located south of Lurin Avenue, construction along Lurin Avenue may be conducted during the nesting/breeding season. However, if active nests are located during the pre-activity field survey, no grading or heavy equipment activity shall take place within at least 500 feet of an active listed species or raptor nest, 300 feet of other sensitive or protected (under MBTA or California Fish and Game Code) bird nests (non-listed), or within 100 feet of sensitive or protected songbird nests until the nest is no longer active.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

4b. Response: ***(Source: AMECa; AMECb; AAW 2011b)***

Section 6.1.2 of the MSHCP states that the Project proponent shall ensure that, through the California Environmental Quality Act (CEQA) process, Project applicants develop Project alternatives demonstrating efforts that first avoid, and then minimize direct and indirect effects to wetlands. An avoidance alternative shall be selected, if feasible. If an avoidance alternative is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/riverine areas and vernal pools, and associated functions and values to the greatest extent possible shall be selected. Those impacts that are unavoidable shall be mitigated such that the lost functions and values as they relate to covered species are replaced as set forth under the DBESP (AMECb, p. 1).

There is Southern Willow Scrub habitat south of Lurin Avenue and west of Cole Avenue. This Riparian/Riverine Area is not part of any planned MSHCP conservation effort, and is not adjacent to proposed conservation lands. The area is small and isolated; however, it is possible that Least Bell's Vireo and Southwestern Willow Flycatcher could utilize this habitat during their breeding season (generally March through August). Direct impacts to the Southern Willow Scrub habitat will not occur; and will be avoided. Indirect impacts, such as dust, noise, lighting, runoff, will be minimized by implementation of Best Management Practices (BMPs) (AMECb, p. 3).

The proposed storm drain improvements and drainage ditch will not change the volume of storm water runoff downstream. However, the flow width and flow velocity within the first 125 feet immediately after the storm drain outlet will increase from 3.2 to 3.9 feet per seconds. This insignificant increase in flow width and velocity is not expected to cause erosion or changes in the flow pattern further downstream of the Project area (AAW 2011b, p-3.2).

The proposed Project will not adversely affect riparian habitat within the Project area or beyond the Project area. Therefore, the proposed design features and minimization measures will allow the Project to be biologically equivalent or superior to

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

that which would occur under an avoidance alternative without these measures (AMECb, p. 3).

Through design of the Project, potential impacts to riparian habitat or other sensitive natural communities will be minimized to **less than significant**.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐

4c. Response: ***(Source: AMECc)***

The only portion of the Project having the potential to impact biological resources is located on the southerly side of Lurin Avenue within APNs 266-140-006 and 266-160-001. Therefore, field surveys south of Lurin Avenue were conducted by AMEC on August 23 and September 12, 2011 to identify potential jurisdictional water features. Three criteria must be fulfilled in order to classify an area as a wetland under the jurisdiction of the U.S. Army Corps of Engineers (USACE): 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology.

The Jurisdictional Delineation Report concluded that one jurisdictional drainage (Drainage A) was present in the Project area with three distinct segments (AMECc, Figure 6, Impact Assessment Map); however, as detailed further below, the Project will avoid this drainage. Drainage A contains Waters of the U.S. (WUS) of which a portion qualifies as a wetland, Waters of the State of California, and CDFG streambed and associated riparian habitat, and riparian/riverine areas (AMECc, p. 5-1).

Summary of Jurisdictional Areas

Drainage ID	Non-Wetland WUS	Wetland WUS	CDFG Jurisdiction
A	0.015 acre	0.320 acre	0.701 acre

Segment 1 of Drainage A is located on the southeast corner of Cole Avenue and Lurin Avenue. It receives hydrology from a culvert which originates on the opposite side of Lurin Avenue at a storm drain inlet. Water flows to the west through the concrete lined ditch and into two 2-foot diameter concrete pipes beneath Cole Avenue. Segment 1 had surface water present, but was completely unvegetated. No hydric soils were present due to the segment being lined with concrete; therefore, it was determined that Segment 1 was classified as non-wetland WUS (AMECc, p. 5-1).

Segment 2 of Drainage A is located along the south side of Lurin Avenue between Cole Avenue and a residential driveway. Water continues to the west and flows beneath a residential driveway through a 16-inch corrugated metal pipe. Vegetation present was remnant cattails (*Typha sp.*), black willow (*Salix gooddingii*) and arroyo willow (*Salix lasiolepis*). With a soft bottomed drainage and 3-inches of standing water, Segment 2 was classified as wetland WUS. USACE jurisdiction was approximately 3 feet wide based on ordinary high water mark (OHWM) measurements and CDFG jurisdiction was approximately six feet wide based on bank to bank limits (AMECc, pp. 5-1 and 5-5).

Segment 3 is located on APN 266-140-006 and the public right-of-way directly north of the parcel along Lurin Avenue. Segment 3 receives hydrology from a concrete box culvert originating on the north side of Lurin Avenue and from a 16-inch corrugated metal pipe originating from Segment 2. Water flows in a southwest direction and exits the Project site near the middle of the western boundary. Segment 3 is dominated by cattails in the middle of the drainage with curly dock (*Rumex crispus*), a non-native species, near the edges. The upstream portion of Segment 3 exhibited wetland characteristics, while the downstream portion was determined to be non-jurisdictional due to the absence of an ordinary high water mark. The wetland containing dense cattails in Segment 3 appears to substantially reduce flow velocity causing water to flow underground and likely surfaces again downstream. There was no CDFG jurisdiction south of the wetland due to a lack of streambed and bank, and a lack of riparian vegetation. Non-native ornamental species are present downstream; however, do not constitute riparian vegetation (AMECc, p. 5-5).

The proposed Project footprint has been designed to avoid direct impacts to all segments of Drainage A. As outlined above, the proposed storm drain improvements and drainage ditch will not change the volume of storm water runoff downstream. However, the flow width and flow velocity within the first 125 feet immediately after the storm drain outlet will increase

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
from 3.2 to 3.9 feet per seconds. This insignificant increase in flow width and velocity is not expected to cause erosion or changes in the flow pattern further downstream of the Project area (AAW 2011b, p-3.2). To maintain the discharge area and ensure proper upkeep of the low-flow drainage ditch, the City will be seeking to obtain an easement from the property owner. If the easement is not granted by the property owner and the Project can't build the low-flow drainage ditch, the design of the outlet structure (within right-of-way) will be adjusted such that the impact would remain the same. Therefore, impacts to jurisdictional areas will be **less than significant**.				
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
4d. Response: ***(Source: AMECa)*** The Project area is not located in an area identified as part of the MSHCP Criteria Area or any areas identified as providing for wildlife movement. The Project is located primarily underground within existing improved roadways and the riparian vegetation south of Lurin Avenue will be avoided. Therefore, the Project will not result in a significant constraint to wildlife movement within or along the drainages (AMECa, p. 4). Impacts are considered **less than significant**.				
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
4e. Response: ***(Source: AMECa)*** The Project consists of the construction and operation of storm drain improvements located mainly in right-of-ways. No oak trees are located on the proposed sites (AMECa, Appendix 3). Therefore, the Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance and will be consistent with the City's Urban Forestry Manual. **No impacts** will occur.				
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐
4f. Response: ***(Source: AMECa; AMECb; AMECc)*** The Project is located within the boundaries of the MSHCP. The purpose of the MSHCP is to conserve habitat for selected species throughout western Riverside County. The MSHCP consists of several Criteria Areas and Cells that assist in facilitating the process by which individual properties are evaluated for inclusion and subsequent conservation in the MSHCP. In addition to Criteria Cell requirements, the MSHCP requires consistency with Sections 6.1.2 (Protection of Species within Riparian/Riverine Areas and Vernal Pools), 6.1.3 (Protection of Narrow Endemic Plant Species), 6.1.4 (Urban and Wildlands Interface), 6.3.2 (additional Survey Needs and procedures), Appendix C (standard Best management Practices), and 7.5.3 (Construction Guidelines). The MSHCP serves as a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP), pursuant to Section (a)(1)(B) of the Endangered Species Act as well as the Natural Communities Conservation Plan (NCPP) under the State NCCP Act of 2001. The Project site is not within an MSHCP Criteria Cell; thus, there are no specific conservation requirements for the Project site (AMECa, p. 2). The City is a permittee of the MSHCP and is required to comply with the provisions of the plan. The City is consistent with Section 6.1.2 by directly avoiding riparian/riverine areas and minimizing indirect impacts through BMPs (AMECb, p. 3 and AMECc, p. 6-1), Section 6.1.3 is not applicable to the Project (AMECa, Appendix 5), Section 6.1.4 is not applicable to the Project since there is no linkages or conservation areas in or adjacent to the Project (AMECa, Appendix 5, and AMECb, p. 3), Section 6.3.2 is not applicable to the Project because burrowing owls are not present on or around the Project due to lack of suitable habitat and burrows (AMECa, p. 4), and Section 7.5.3 and Appendix C by implementing mitigation measures like **MM Geo 1** and BMPs measures during construction (AMECb, p. 2). As required by MSHCP, a Habitat Suitability Assessment and DBESP Report were completed by AMEC for the Project site. See response to item 4a through 4d., above. Results concluded that impacts are **less than significant with implementation of mitigation measures MM Biology 1 and 2** and avoidance through design. Therefore, conflicts with the provisions of an adopted HCP, NCCP, or other approved local conservation plan are considered **less than significant**.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
5. **CULTURAL RESOURCES.** Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒

5a. Response: ***(Source: GP FPEIR, Table 5.5-A Historical Districts and Neighborhood Conservation Areas)***

The State *CEQA Guidelines* state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the *California Register of Historical Resources*, included in a local register of historical resources, or determined to be historically significant by the Lead Agency. The proposed Project is not located within the vicinity of a historical district or neighborhood conservation area. Additionally, these segments would have already been disturbed or destroyed by previous construction activities that would result in them no longer contributing to the local register. Therefore, implementation of the proposed Project will not cause a physical change which would affect historical resources.

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5?	☐	☒	☐	☐

5b. Response: ***(Source: GP FPEIR Figure 5.5-1 - Archaeological Sensitivity and Figure 5.5-2 - Prehistoric Cultural Resources Sensitivity)***

According to *GP FPEIR*, Figure 5.5-1 and 5.5-2, the Project is located in an area of medium archaeological sensitivity and pre-historic cultural resources sensitivity. Due to the disturbed nature of the Project site from previous construction activities, impacts to archaeological resources are not anticipated. However, in the unlikely event that archaeological resources are unearthed during construction at the proposed Project site, **implementation of mitigation measure MM Cultural 1** will **reduce any potential impacts to less than significant**.

MM Cultural 1: Should any cultural and/or archaeological resources be or inadvertently discovered during construction, construction activities in the vicinity of the discovery shall immediately halt and shall be moved to other parts of the Project site and a qualified archaeologist shall be contacted to determine the significance of the resource(s). If the find is determined to be a historical or unique archaeological resource, as defined in Section 15064.5 of the California Code of Regulations (State *CEQA Guidelines*), avoidance or other appropriate measures shall be implemented.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

5c. Response: ***(Source: GP 2025, Policy HP-1; GP FPEIR p. 5-5.3)***

The only locations within the city of Riverside that are considered paleontologically sensitive are the areas south of Mockingbird Canyon Reservoir and Campbell's Sand Pit, just east of Riverside County's Anza Narrows Regional Park. Due to the highly disturbed nature of the Project site from previous construction activities, impacts to paleontological resources are not anticipated. To ensure that potential impacts to paleontological resources are avoided or reduced to a less than significant level**, implementation of mitigation measure MM Cultural 2 will reduce impacts to a less than significant** level:

MM Cultural 2: Should any paleontological resources be uncovered during construction, construction activities in the vicinity of the discovery shall be moved and a qualified paleontological resources specialist will be retained to evaluate the resources. If the find is determined to be significant, avoidance or other appropriate measures as identified by the paleontologist shall be implemented. Appropriate measures would include that a qualified paleontologist be permitted to recover, evaluate; and curate the find(s) in accordance with current standards and guidelines.

d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

5d. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 - Archaeological Sensitivity and Figure 5.5-2 - Prehistoric Cultural Resources Sensitivity)***

According to *GP FPEIR*, Figure 5.5-1 and 5.5-2, the Project is located in an area of medium archaeological sensitivity and pre-historic cultural resources sensitivity, and not located within the vicinity of any cemeteries. The proposed Project is not expected to disturb any human remains, including those interred outside of formal cemeteries. The Project is in an already disturbed area. In the unlikely event that construction activities uncover human remains, the proper authorities will be notified and standard procedures for the respectful handling of human remains would be adhered to in compliance with California Health and Safety Code section 7050.5 and Public Resources Code section 5097.98. Therefore, potential impacts

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
with regard to the disturbance of human remains will be **less than significant.**				
6. **GEOLOGY AND SOILS.** Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
6i. Response: ***(Source: GP 2025, Figure PS-1 – Regional Fault Zones)*** A fault line is shown on *GP 2025*, Figure PS-1 which runs adjacent to the western side of Interstate 215, approximately 4 miles northeast of the proposed Project site. Proposed Project activities include construction of storm drain improvements which will not expose people to hazards related to fault rupture. **No impacts** will occur.				
ii. Strong seismic ground shaking?	☐	☐	☒	☐
6ii. Response: ***(Source: GP FPEIR, p. 5.6-5)*** The greatest source of earthquake damage is caused by ground shaking. As is the case with most regions n Southern California, Riverside is susceptible to moderate to high amounts of seismic ground shaking. The proposed Project involves the construction of storm drain improvements. Implementation of standard engineering and construction protocols that are required would reduce exposing people to hazards related to ground shaking to **less than significant**.				
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
6iii. Response: ***(Source: GP 2025, Figure PS-1 – Regional Fault Zones, Figure PS-2 – Liquefaction Zones)*** The Project site is not located within an area designated by the *GP 2025* as a liquefaction hazard zone. Considering the stability of the underlying soils, the distance of the site to active fault zones, the proposed Project will not result in or expose people to significant seismic ground failure. **No impacts** will occur.				
iv. Landslides?	☐	☐	☐	☒
6iv. Response: ***(Source: GP FPEIR, Figure 5.6-1 – Areas Underlain by Steep Slope)*** According to *GP FPEIR*, Figure 5.6-1, the Project site is not located within an area with natural slopes over 10%. The proposed Project will not significantly alter the existing topographical condition within the Project area. **No impacts** will occur.				
b. Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
6b. Response: ***(Source: Project Description; Title 17 – Grading Code; NPDES; AAW 2011b)*** All proposed Project activities will be performed in compliance with the City of Riverside Municipal Code for Grading (Title 17), which will alleviate excess erosion and the potential occurrence of unstable soil conditions from Project construction. The proposed storm drain improvements are generally located below or at ground level and would not entail substantial changes in topography or unstable soil conditions. The primary components of the Project are below ground and will reduce erosion and the loss of topsoil. The proposed Project has the potential to result in the short-term loss of top soil during construction due to runoff and soil erosion. This will be minimized, however, by compliance with the National Pollutant Discharge Elimination System (NPDES) general construction permit and incorporation of mitigation measure **MM Geo 1** which requires that an erosion control plan be implemented during construction activities. As shown in **MM Geo 1**, below, applicable BMPs will be implemented to minimize the loss of topsoil or substantial erosion, thus, potential impacts are considered **less than significant**. **MM Geo 1:** Prior to the approval of the final construction plans, an Erosion Control plan that incorporates Best Management Practices (BMPs) to control erosion and protect water quality shall be approved by the Public Works Department. The BMPS shall be implemented by the construction contractor throughout the construction period.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Once operational, the Project will not result in a substantial increase in storm water runoff (AAW 2011b) and as such, will not cause soil erosion or loss of topsoil.				
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
6c. Response: ***(Source: GP Figure PS-1 – Regional Fault Zones, Figure PS-2 – Liquefaction Zones, Figure PS-3 – Soils with High Shrink-Swell Potential; GP FPEIR Figure 5.6-1 - Areas Underlain by Steep Slope, Figure 5.6-4 – Soils, Table 5.6-B – Soil Types)*** See response to item 6a., above. According to the *GP 2025* (p. PS-7), the Project site is not located within an area of unsuitable soil conditions that would result in subsidence. Additionally, the proposed Project activities include construction of storm drain improvements and will not expose people to geologic hazards. **No impacts** will occur.				
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
6d. Response: ***(Source: GP FPEIR Figure 5.6-4 – Soils, Table 5.6-B – Soil Types, Figure 5.6-5 – Soils with High Shrink-Swell Potential; California Building Code as adopted by the City of Riverside and set out in Title 16 of the Riverside Municipal Code)*** See response to 6c., above. According to the *GP FEIR* Figure 5.6-4 there are two soil groups present on the proposed Project site: Monserate and Fallbrook. Monserate is comprised of sandy loams, sandy clay loam, and indurated hardpan. Fallbrook is comprised of sandy loam, sandy clay loam, and weathered granite. Monserate and Fallbrook are known to have moderate shrink/swell potential, are subject to medium runoff rates, and are subject to moderate erosion levels. Both soil groups are not commonly associated with hazards related to expansive soils. Impacts are considered **less than significant**.				
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
6e. Response: ***(Source: Project Description)*** The proposed Project involves the construction of a storm drain improvements and will not require septic tanks or alternative waste water disposal systems. **No impacts** will occur.				
7. **GREENHOUSE GAS EMISSIONS.** Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
7a. Response: ***(Source: AAW 2011a)*** Greenhouse gases (GHG) are not presented in lbs/day like criteria pollutants; they are typically evaluated on an annual basis using the metric system. Additionally, unlike the criteria pollutants, GHG do not have adopted significance thresholds associated with them at this time. Several agencies, at various levels, have proposed draft GHG significance thresholds for use in CEQA documents. The California Air Resources Board (CARB) released in 2008 draft, GHG thresholds for industrial and residential and commercial projects. These draft GHG thresholds from CARB have yet to identify a performance standard for construction-related emissions for industrial or residential and commercial projects. Similarly, the SCAQMD has been working on GHG thresholds for development project as well. In December 2008, the SCAQMD adopted a threshold of 10,000 metric tonnes per year of CO_2 equivalents ($MTCO_2E/yr$) for stationary sources project for which SCAQMD was the lead agency. The most recent draft proposal was in November 2009 and included significance thresholds for residential, commercial, and mixed use projects at 3,500, 1,400, and 3,000 $MTCO_2E/yr$, respectively. The SCAQMD significance thresholds evaluate construction emissions by amortizing them over an expected project life of 30 years.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Evaluation of CalEEMod output (AAW 2011a) indicates that an estimated total of 49.24 $MTCO_2E$ per year will occur from Project construction equipment over the course of the estimated 45-day construction period. The draft GHG threshold from CARB has yet to identify a performance standard for construction-related emissions for industrial or commercial projects. However, when compared to the draft SCAQMD thresholds, construction is below the lowest draft recommended threshold of 1,400 $MTCO_2E$/year for commercial projects. Due to the lack of adopted emissions thresholds, the estimated amount of emissions from Project construction, and negligible operational emissions from infrequent maintenance vehicles, the proposed Project will not generate a significant amount of GHG emissions and the impact is considered to be **less than significant**.				
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
7b. Response: ***(Source: AAW 2011a)***				
See response to item 7a., above. As the proposed Project involves the construction a storm drain alignment, it is not considered a source of operational GHG emissions. The Project will not result in any changes to the existing land use patterns within the project area and its construction does not generate significant amounts of GHG; therefore, the Project will not conflict with any applicable plan, policy, or regulation for the reduction in GHG emissions. Impacts are considered **less than significant**.				
8. **HAZARDS & HAZARDOUS MATERIALS.** Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
8a. Response: ***(Source: Project Description)***				
The Project consists of the construction and operation of storm drain improvements, which does not include the permanent use of hazardous materials. There may be small quantities of hazardous materials associated with construction equipment such as fuels, lubricants and solvents. City of Riverside standards and policies regarding the use of hazardous material will be followed. Therefore, impacts associated with the potential short-term use of hazardous materials during construction are considered **less than significant**.				
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
8b. Response: ***(Source: Project Description)***				
See response to item 8a., above.				
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
8c. Response: ***(Source: GP 2025 Figure E-1 - Education Facilities)***				
Mark Twain Elementary School is located on Cole Avenue and Krameria Avenue within one-quarter mile east of the Project site. However, the Project does not involve use of hazardous materials, substance, or waste. Therefore, impacts are considered **less than significant**.				
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
8d. Response: ***(Source: GP 2025 Figure PS-5 – Hazardous Waste Sites; Envirostor)***				
According to the GP 2025, the closest hazardous waste site to the Project is March Air Reserve Base, approximately 3 miles east of the Project site. Additionally on the online Envirostor database, Riverside National Cemetery (33890003), Camp Haan Rifle Range (80000214), and March Air Force Base (33970002) were listed. These sites are approximately 1.5 miles				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
east of the Project site. The Riverside National Cemetery is certified closed as of 5/1/1986, Camp Haan Rifle Range is active as of 2/4/2009, and March Air Force Base is active as of 5/1/1986. **No impacts** are anticipated.				
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
8e. Response: ***(Source: GP 2025 Figure PS-6 – Airport Safety Zones and Influence Areas)*** The closest airport to the Project site is March Joint Air Reserve Base which is located approximately 3 miles east of the Project site. Additionally, because the storm drain improvements will be at or below ground surface and construction activities are short-term and temporary, the Project is not expected to result in a safety hazard. Therefore, the Project would not result in a safety hazard for people working in the Project area. **No impacts** will occur.				
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
8f. Response: ***(Source: GP 2025 Figure PS-6 – Airport Safety Zones and Influence Areas)*** The Project site is not located in the vicinity of a private air strip therefore **no impacts** will occur.				
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
8g. Response: ***(Source: Project Description)*** The proposed Project includes construction and operation of a storm drain improvements that will not impair the implementation of or physically interfere with an emergency response plan and/or emergency evacuation plan. **No impacts** will occur.				
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
8h. Response: ***(Source: GP 2025 Figure PS-7 – Fire Hazard Areas)*** The Project site is not located within an identified area of fire hazard. Because the proposed Project consists of storm drain improvements within an existing developed residential area, it will not expose people or structures to risk of loss, injury or death involving wildland fire. Therefore, **no impacts** will occur.				
9. **HYDROLOGY AND WATER QUALITY.** Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
9a. Response: ***(Source: Project Description; AAW 2011b)*** Construction of the proposed Project may result in the discharge of sediment and other construction by-products. This will be minimized however, by compliance with the NPDES general construction permit issued by the State Water Resources Control Board (SWRCB) and implementation of mitigation measure **MM Geo 1**, above, which requires that an erosion control plan be implemented during construction activities with applicable BMPs being implemented to minimize the loss of topsoil or substantial erosion, thus, potential impacts from construction are considered **less than significant with mitigation incorporated**. The proposed storm drain improvements and drainage ditch will convey storm water emanating from residential areas and will not create new sources of pollutants. The proposed Project will not change the volume of storm water runoff downstream. It will reduce storm water pollutant discharges by reducing flooding during storm events, allowing for infiltration, and routing storm water around potential pollutant sources in urbanized areas. However, the flow width and flow velocity within the first 125 feet immediately after the storm drain outlet will increase from 3.2 to 3.9 feet per seconds. This				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
insignificant increase in flow width and velocity is not expected to cause erosion or changes in the flow pattern further downstream of the Project area (AAW 2011b, p.3.2). The discharge of storm water from the storm drain improvements is regulated under the NPDES municipal separate storm water sewer system (MS4) permit issued to the City and other municipalities. Therefore, the Project's impacts are considered less than significant.				
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
9b. Response: ***(Source: Project Description)*** The proposed Project does not include improvements that require use of groundwater and will not affect an aquifer. The size of the Project is limited and will not result in a substantial loss of groundwater recharge capability. Impacts are considered **less than significant**.				
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
9c. Response: ***(Source: Project Description; AAW 2011b)*** The proposed Project includes the construction and maintenance of storm drain improvements. The proposed improvements will generally follow the existing drainage pattern of the area. To maintain the discharge area and ensure proper upkeep of the low-flow drainage ditch, the City will be seeking to obtain an easement from the property owner. However, if the easement is not granted by the property owner and the Project can't build the low-flow drainage ditch, the design of the outlet structure (within right-of-way) will be adjusted such that the impact would remain the same. The intent of the proposed Project is to reduce the potential for flooding in the Project area. The proposed storm drain improvements will not change the volume of storm water runoff downstream or substantially after existing drainage patterns. However, the flow width and flow velocity within the first 125 feet immediately after the storm drain outlet will increase from 3.2 to 3.9 feet per seconds (AAW 2011b, p-3.2). It will not result in substantial erosion or siltation on or off site. The impacts with respect to surface runoff are **less than significant**.				
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
9d. Response: ***(Source: Project Description; AAW 2011b)*** See response to item 9c., above. Additionally, the *Hydrology and Hydraulics Study* conducted by Albert A. Webb Associates (AAW 2011b) indicates the proposed storm drain improvements will completely eliminate the flooding condition at the Cole and Lurin Avenue intersection during a 10-year storm event. For a 100-year event, flooding at the Cole and Lurin Avenue intersection will be significantly lowered from 78 to 7 cubic feet per second (AAW 2011b, p. 3-2). Impacts are considered **less than significant**.				
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
9e. Response: ***(Source: Project Description; AAW 2011b)*** See responses to item 9c. and 9d., above.				
f. Otherwise substantially degrade water quality?	☐	☐	☐	☒
9f. Response: ***(Source (Source: Project Description)***				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
The proposed Project will not substantially degrade water quality as the purpose of the Project will collect and convey storm water runoff and reduce existing flooding in the Project area. Therefore, **no impacts** will occur.				
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
9g. Response: ***(Source: GP 2025, Figure PS-4 – Flood Hazard Areas)*** According to *GP 2025* Figure PS-4, the Project is not within a 100-year flood hazard area. Additionally, the Project does not include the construction of any housing. **No impacts** will occur.				
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
9h. Response: ***(Source: GP 2025, Figure PS-4 – Flood Hazard Areas)*** See response to item 9g., above.				
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
9i. Response: ***(Source: GP 2025, Figure PS-4 – Flood Hazard Areas)*** See response to item 9g and 9f above**.** According to *GP 2025* Figure PS-4, the Project is not located in a dam inundation area. **No impacts** will occur.				
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
9j. Response: ***(Source: GP 2025, Figure PS-4 – Flood Hazard Areas)*** Considering the distance of the Project site from landlocked water bodies, such as Lake Matthew (approximately 5 miles southwest of the Project site) the proposed Project will not be subject to inundation by seiche, tsunami, or mudflow. **No impacts** will occur.				
10. **LAND USE AND PLANNING:** Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
10a. Response: ***(Source: Project Description)*** The primary purpose of the proposed Project is to control flooding associated with storm water runoff. The proposed storm drain improvements will be located below the ground surface and will not physically divide any communities. **No impacts** will occur.				
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
10b. Response: ***(Source: GP 2025, Figure LU-10 – Land Use Policy)*** The Project lies within an area designated by the City of Riverside as a Medium Density Residential land use. Installation of the proposed storm drain improvement would not affect the surrounding land use designations or other policies or regulations. Therefore, **no impacts** will occur.				
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒	☐	☐
10c. Response: ***(Source: MSHCP, AMECa)*** See Responses 4a. and 4f., above. The Project is located within the boundaries of the MSHCP and will comply with all requirements set forth in the MSHCP. There are no other environmental plans or policies that apply to this Project. Therefore, impacts are **less than significant with mitigation incorporated**.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
11. **MINERAL RESOURCES.** Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
11a. Response: ***(Source: GP 2025, Figure – OS-1 – Mineral Resources)*** According to *GP 2025* Figure OS-1, the Project site is not located within an area with known mineral resources. There are no current mining activities in the Project area The Project alignment will impact a relatively small footprint of only 2,500 linear feet for the storm drain within existing streets and approximately 300 LF south of Lurin Avenue which would not result in a significant loss of availability of unknown mineral resources. Therefore **no impacts** will occur.				
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
11b. Response: ***(Source: General Plan 2025 Figure – OS-1 – Mineral Resources)*** See Response 11a., above**.**				
12. **NOISE.** Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
12a. Response: ***(Source: Title 7 – Noise Code)*** The Project is located in an area designated by the *GP 2025* as Residential. According to Title 7 of the Riverside Municipal Code, the exterior noise standard for this type of land use is 55 dBA. The nearest sensitive receptors are the residences directly adjacent to the Project alignment and Mark Twain Elementary School, approximately 326 feet north of the proposed storm drain improvements. Construction of the Project may potentially create short-term noise impacts, particularly during construction. However, the construction noise will not be focused in proximity to any particular sensitive receptor as the work will vary according to the progress made along the alignment. To reduce potential impacts from short-term construction noise to **less than significant** levels, **MM Noise 1** and **2 will be implemented**. **MM Noise 1:** All construction equipment shall be operated with mandated noise control equipment (i.e., mufflers or silencers). **MM Noise 2:** To inform potential sensitive receptors of the pending Project construction, the City shall give written notification to all landowners, tenants, business operators, and residents immediately adjacent to the Project site, 30 days prior to the start of construction. The written notification shall include a tentative construction schedule and contact information for use by the public if specific noise issues arise. Additionally, once the drainage facilities are installed, the only source of operation noise impacts would be from periodic visits from maintenance staff's vehicles, therefore, impacts are considered **less than significant with mitigation incorporated**.				
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
12b. Response: ***(Source: Project Description)*** The proposed Project would involve the temporary use of construction equipment for installation. Construction equipment may result in temporary increases above existing noise levels. Vibration from the equipment can generally only be felt out to a distance of approximately 50 feet from the source. Maintenance activities would be infrequent and involve less equipment than the initial construction of the proposed Project. Therefore, potential impacts are considered **less than significant**.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
12c. Response: ***(Source: Project Description)*** The increased noise levels associated with construction activities will not be permanent and last approximately 45 days. Apart from periodic maintenance activity, on-going operation of the Project would not permanently increase noise levels in the Project vicinity. Therefore, potential impacts are considered **less than significant**.				
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
12d. Response: ***(Source: Title 7 – Noise Code and Project Description)*** See response to item 12a., above. With **implementation of MM Noise 1 and 2, impacts are considered to be less than significant.**				
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
12e. Response: ***(Source: GP 2025, Figure N-9 – March ARB Noise Contour)*** The Project site is not located within the vicinity (or within two miles) of a public airport or public use airport, but lies in the airport influence area boundary of the March Air Force Base. According to the *GP 2025*, the Project area is outside the noise contours of March Air Reserve Base. However, the proposed Project involves the construction of a storm drain improvement and will not expose people residing or working in the Project area to excessive noise levels. **No impacts** will occur.				
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
12f. Response: ***(Source: GP 2025, Figure PS-6 – Airport Safety Zones and Influence Areas)*** There are no private airstrips within the City or Project boundary; therefore the Project will not expose people residing or working in the Project area to private airstrip noise. **No impacts** will occur.				
13. **POPULATION AND HOUSING.** Would the project result in:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
13a. Response: ***(Source: Project Description)*** The Project does not include the construction of new homes or businesses and will not directly induce substantial population growth because the Project is designed to improve existing flooding problems in an existing residential area. The Project involves the installation of a local storm drain improvements and will not result indirectly in additional development within the Orangecrest Specific Plan area. Therefore, **no impacts** will occur.				
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
13b. Response: ***(Source: Project Description)*** The proposed Project involves the installation of a storm drain improvements and will not result in the displacement of any persons or necessitate the construction of replacement housing elsewhere. **No impacts** will occur.				
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
13c. Response: ***(Source: Project Description)*** See response to item 13b., above.				
14. **PUBLIC SERVICES.** Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☐	☒
14a. Response: ***(Source: Project Description)*** The proposed Project consists of the construction and operation of storm drain improvements which will not necessitate the construction of new facilities or increase demand on fire protection services. **No impacts** will occur.				
b. Police protection?	☐	☐	☐	☒
14b. Response: ***(Source: Project Description)*** The proposed Project consists of the construction and operation of storm drain improvements which will not necessitate the construction of new facilities or increase demand on police protection services. **No impacts** will occur.				
c. Schools?	☐	☐	☐	☒
14c. Response: ***(Source: Project Description)*** The proposed Project consists of the construction and operation of storm drain improvements and will not necessitate the construction of new facilities or increase demand on school services **No impacts** will occur.				
d. Parks?	☐	☐	☐	☒
14d. Response: ***(Source: Project Description)*** The proposed Project consists of the construction and operation of storm drain improvements and will not require park services. **No impacts** will occur.				
e. Other public facilities?	☐	☐	☐	☒
14e. Response: ***(Source: Project Description)*** There are no other public facilities that would be adversely impacted by implementation of the proposed Project. **No impacts** will occur.				
15. **RECREATION.**				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
15a. Response: ***(Source: Project Description)*** The proposed Project does not involve new housing or employment opportunities that would directly generate users which would result in an increased use of existing parks or recreational facilities. **No impacts** will occur.				
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
15b. Response: ***(Source: Project Description)*** The proposed Project does not include recreational facilities or involve the construction of housing or creation of employment opportunities that would directly generate users that would result in a need for construction or expansion of recreational facilities. **No impacts** will occur.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
16. **TRANSPORTATION/TRAFFIC.** Would the project result in:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
16a. Response: ***(Source: Project Description)*** There will be construction-related equipment traversing the roads within the vicinity of the Project during construction. However, the proposed Project consists of the construction of storm drain improvements and will not include any component that would result in a permanent increase in vehicle trips in the Project area, and traffic generated by maintenance of the facilities is expected to be minimal. **No impacts** to traffic levels will occur as a result of this Project.				
b. Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
16b. Response: ***(Source: Project Description)*** The proposed Project includes construction of storm drain improvements and will not result in an increase in traffic on local roads. No conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways will occur as a result of the proposed Project. **No impacts** will occur.				
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
16c. Response: ***(Source: Project Description)*** March Air Reserve Base is approximately 3 miles southeast of the Project site. The proposed Project includes construction of storm drain improvements and will not include any component that would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. **No impacts** will occur.				
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
16d. Response: ***(Source: Project Description)*** The proposed Project includes construction of storm drain improvements that are below or at ground surface. It will not result in changes to an existing roadway, and will not include any component that would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. **No impacts** will occur.				
e. Result in inadequate emergency access?	☐	☐	☐	☒
16e. Response: ***(Source: Project Description)*** The proposed Project includes construction of storm drain improvements and will not include any component that would result in inadequate emergency access. **No impacts** will occur.				
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
16f. Response: ***(Source: Project Description)*** The proposed Project includes construction of storm drain improvements and will not include any component that would				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
result in conflict with adopted policies, plans or programs supporting alternative transportation. **No impacts** will occur.				
17. **UTILITIES AND SERVICE SYSTEMS.** Would the project result in:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
17a. Response: ***(Source: Project Description)*** The proposed Project will not require any wastewater treatment by the applicable Regional Water Quality Control Board. Therefore, **no impacts** will occur.				
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
17b. Response: ***(Source: Project Description)*** The proposed Project does not require or result in the expansion of new water or wastewater treatment facilities. Therefore, **no impacts** will occur.				
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
17c. Response: ***(Source: Project Description)*** The proposed Project consists of the installation of local storm drain improvements. This Project is designed to reduce existing flooding in the Project area; therefore, the proposed Project would help collect and convey storm water runoff in the Project area. The proposed Project will not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. Therefore, **no impacts** will occur.				
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
17d. Response: ***(Source: Project Description)*** The proposed Project will not require new or expanded water supplies. Therefore, **no impacts** will occur.				
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
17e. Response: ***(Source: Project Description)*** The proposed Project would not generate wastewater. No new wastewater facilities are required as a result of the proposed Project. Therefore, **no impacts** will occur.				
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
17f. Response: ***(Source: Project Description)*** Construction of the Project does not present the potential for generation of significant volumes of solid waste. Any waste disposal will occur at permitted landfills. Maintenance of the facility will not generate significant volumes of solid waste. Therefore, **no impacts** will occur.				
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
17g. Response: ***(Source: Project Description)*** See response to item 17f, above. If any waste is generated during the construction process, disposal of construction materials will occur in accordance with federal, state, and local regulations. Therefore, **no impacts** are anticipated.				

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
18. **MANDATORY FINDINGS OF SIGNIFICANCE.**				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or an endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

18a. Response: ***(Source: Above Checklist)***

Construction and operation of the proposed Project will not substantially degrade the quality of the environment due to the temporary nature of construction, the small footprint associated with the storm drain improvements, and the majority of facilities being underground within paved road rights-of-way. With incorporation of mitigation measures **MM Biology 1 and MM Biology 2**, implementation of the Project will not substantially reduce the habitat of any wildlife or fish species or cause them to drop below self-sustaining levels. No plant or animal communities will be eliminated by implementation of the proposed Project. Again, due to the temporary nature of construction, the underground location of the Project, impacts will be less than significant with mitigation incorporated.

The proposed Project will be located in an area of medium archaeological sensitivity and prehistoric cultural resources sensitivity. The proposed storm water improvements are located primarily within previously disturbed rights-of way. In the unlikely event that any materials of cultural significance (historical, archaeological, and paleontological) are found during construction of any part of the Project, **mitigation measures MM Cultural 1 and MM Cultural 2 have been included to minimize impacts to less than significant**. Therefore, implementation of the proposed Project is not expected to eliminate important examples of the major periods of California history or prehistory.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐

18b. Response: ***(Source: Above Checklist)***

Based on the analysis identified in this Initial Study, the Project will not have cumulatively considerable impacts. The proposed Project is the construction of storm drain improvements to help reduce flooding in the Project area. Therefore, Project impacts are only temporary and are **not cumulatively considerable**.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

18c. Response: ***(Source: Above Checklist)***

The incorporation of design measures, adherence to existing codes, ordinance, regulations, standards and guidelines, combined with mitigation measures **MM Geo 1 and MM Noise 1 and 2,** construction and operation of the Project does not present the potential for substantial direct or indirect adverse effects to human beings. Potential impacts in this regard are considered **less than significant with mitigation measures incorporated**.

REFERENCES

The following documents were referred to as information sources during preparation of this document. Some of these documents may also be available at the Riverside City and Downtown Branch of the Riverside Public Library at 3581 Mission Inn Avenue, Riverside CA.

Cited As	Source
AAW 2011a	Albert A. Webb Associates, *Air Quality Analysis Supporting Information*, July 19, 2011. (Appendix A)
AAW 2011b	Albert A. Webb Associates, *Cole Avenue Storm Drain, Hydrology and Hydraulics Study,* September 2011, Updated November 2011. (Available at the City of Riverside.)
AMECa	AMEC Earth and Environmental, *Cole Avenue Storm Drain Improvement Project, Habitat Suitability Assessment, APN 266-140-006, 266-160-001, Riverside County, California*, January 2012. (Appendix B.1)
AMECb	AMEC Earth and Environmental, *Cole Avenue Storm Drain Improvement Project, Determination of Biologically Equivalent or Superior Preservation,* January 2012. (Appendix B.2)
AMECc	AMEC Earth and Environmental, *Cole Avenue Storm Drain Improvement Project, Jurisdictional Delineation Report,* October 2011. (Appendix B.3)
Caltrans	California Department of Transportation, *California Scenic Highway Mapping System, Riverside County*, September 7, 2011. (Available at http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, accessed November 1, 2011.)
Envirostor	California Department of Toxic Substances Control, *Envirostor Database*, 2007. (Available at http://www.envirostor.dtsc.ca.gov/public/, accessed December 2, 2011.)
FMMP 2008	California Department of Conservation, Division of Land Resource Protection, *Farmland Mapping and Monitoring Program, Riverside County Important Farmland 2008, Sheet 1 of 3*, September 2009. (Available at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/riv08_west.pdf, accessed November 1, 2011.)
GP FPEIR	City of Riverside, *City of Riverside General Plan 2025 Recirculated Final Program Environmental Impact Report*, prepared by Albert A. Webb Associates, Certified November 2007. (Available at http://www.riversideca.gov/planning/gp2025program/, accessed November 1, 2011.)
GP 2025	City of Riverside, *City of Riverside General Plan 2025*, November 2007. (Available at http://www.riversideca.gov/planning/gp2025program/general-plan.asp, accessed November 1, 2011.)
MSHCP	County of Riverside, *Riverside County Integrated Project Multiple Species Habitat Conservation Plan (MSHCP), Volume 1 – The Plan & Volume 2 – The MSHCP Reference Document*, June 17, 2003. (Available http://www.rctlma.org/mshcp/ index.html, accessed November 1, 2011.)

NPDES	California Regional Water Quality Control Board, Santa Ana Region, *2009-0009-DWQ Construction General Permit*, July 1, 2010. (Available at http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml, accessed November 1, 2011.)
SCAQMD 1993	South Coast Air Quality Management District, *CEQA Air Quality Handbook*, April 1993, with November 1993 Update. (Available at SCAQMD.)
SCAQMD 2007	South Coast Air Quality Management District, *2007 Air Quality Management Plan*, June 2007. (Available at http://www.aqmd.gov/aqmp/07aqmp/index.html, accessed November 1, 2011.)
Title 7	City of Riverside, *Municipal Code, Title 7, Noise Control*. (Available at http://www.riversideca.gov/municode/pdf/07/title-7.pdf, accessed November 1, 2011.)
Title 17	City of Riverside, *Municipal Code, Title 17, Grading*. Available at http://www.riversideca.gov/municode/pdf/17/title-17.pdf, accessed November 1, 2011.)

Location	Address
City of Riverside – Public Works	3900 Main Street, Riverside, CA 92522
SCAQMD	South Coast Air Quality Management District 21865 East Copley Drive, Diamond Bar CA 91765-4182

List of Individuals Who Prepared Initial Study

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APPENDIX A

Air *Quality* Analysis Supporting Information

Cole Avenue Storm Drain

Air Quality Analysis Supporting Information

July 19, 2011

Regional Significance Threshold Analysis

The thresholds contained in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993) are considered regional thresholds and are shown in the table below. These regional thresholds were developed based on the SCAQMD's treatment of a major stationary source.

SCAQMD CEQA Daily Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_X	CO	SO_X	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55

Air quality impacts can be described in a short-term and long-term perspective. Short-term impacts will occur during site grading and Project construction and consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Long-term air quality impacts will occur once the Project is in operation. The Project consists of an underground storm drain and low-flow drainage ditch. Operational emissions would only be from the infrequent visits by vehicles driven by maintenance personnel; therefore, only short-term impacts were evaluated.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (less than 0.5 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

The proposed Project includes the construction of an underground storm drain pipeline along portions of Lurin Avenue, Cole Avenue, Estancia Drive, Lost Grove Drive, Country Rose Drive, and Estrella Hills Street. The proposed alignment will be approximately 2,500 linear feet and will be installed using typical trenching methods. An earthern low-flow-drainage ditch will extend approximately 300 feet south of Lurin Avenue at the proposed pipeline outlet.

Short-term emissions were evaluated using the CalEEMod version 2011.1.1 computer program. The total construction period for the proposed Project is approximately 45 days, beginning no sooner than July 1, 2012. The default parameters within CalEEMod were used and these default

values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated construction emissions. In addition to the default values used, several assumptions relevant to model inputs for short-term construction emission estimates used are:

- The Project will begin July 2011 and be completed in September 2012.
- Pipeline construction will be last 41 working days from July 1, 2012 through August 27th. The average trench width will be 5 ft wide. Equipment will include 1 tractor/loader/backhoe, 1 water truck, 1 sweeper truck (around 200HP), 2 concrete industrial saws and entail 4 vendor trips a day.
- Repaving for the pipeline alignment will take approximately 2 days (from August 28-29th). The paving width will be 5 feet wide. Equipment will include: 1 roller, 1 paver, 1 tractor/loader/backhoe and 2 delivery trucks trips per day.
- The grading of the low-flow drainage ditch will take 2 days (from September 3-4). Equipment will include 1 rubber tired dozer. The area disturbed will be no more than 20 feet wide and the ditch will be wider at the outlet of Lurin Avenue and taper down towards the end.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the mitigation option of watering the Project site three times daily which achieves a control efficiency of 61 percent for PM-10 and PM-2.5 emissions.

The results of this analysis are summarized below.

Estimated Daily Construction Emissions

Activity/Year	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Pipeline Construction	6.95	22.83	15.85	0.02	2.12	1.96
Pipeline Paving	3.23	17.22	11.77	0.02	1.66	1.47
Drainage Ditch Grading	3.94	32.57	18.39	0.03	3.93	2.80
Maximum	**3.94**	**32.57**	**18.39**	**0.03**	**3.93**	**2.80**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

As shown in the table above, the emissions from construction of the Project are below the SCAQMD Daily Construction Thresholds for all of the criteria pollutants; therefore, the impact is considered to be less than significant.

Localized Significance Threshold Analysis

Background

As part of the SCAQMD's environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST) methodology that can be used by public agencies to determine whether or not a project

may generate significant adverse localized air quality impacts (both short-term and long-term). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). The Project is located within SRA 23.

Short-Term Analysis

According to the LST methodology, only on-site emissions need to be analyzed. SCAQMD has provided LST lookup tables and sample construction scenarios[1] to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects 5 acres or smaller. Since the Project site is less than 0.5 acres, the 1-acre LST lookup table was utilized to estimate the construction emissions.

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the Project to the nearest sensitive receptors (in meters). The closest sensitive receptors are the existing residences adjacent to the pipeline alignment. To ensure a worst-case analysis, the sensitive receptor position of 25 meters (85 feet) was used. The results are summarized below.

LST Results for Daily Construction Emissions

Pollutant	Peak Daily Emissions (lb/day)			
	NO_X	CO	PM-10	PM-2.5
LST Threshold for 1 acre at 25 meters	**118**	**602**	**4**	**3**
Pipeline Construction	20.4	14.0	1.6	1.5
Pipeline Paving	23.7	14.4	1.7	1.5
Drainage Ditch Grading	31.7	15.0	1.8	1.4
Exceeds Threshold?	**No**	**No**	**No**	**No**

Emissions from construction of the Project will be below the LST established by SCAQMD for the Project; therefore, the impact is considered less than significant.

Long-Term Analysis

This Project involves the construction of an underground storm drain and low-flow drainage ditch. The long-term emissions, as discussed previously, from the operation of this facility are in the form of mobile source emissions, without any stationary sources present. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed Project does not include such uses. Therefore; due to the lack of stationary source emissions, no long-term LST analysis is needed.

[1] http://www.aqmd.gov/ceqa/handbook/LST/LST.html

Greenhouse Gas Analysis

Greenhouse gases (GHG) are not presented in lbs/day like criteria pollutants; they are typically evaluated on an annual basis using the metric system. Additionally, unlike the criteria pollutants, GHG do not have adopted significance thresholds associated with them at this time. Several agencies, at various levels, have proposed draft GHG significance thresholds for use in CEQA documents. The California Air Resources Board (CARB) released in 2008 draft, GHG thresholds for industrial and residential and commercial projects. These draft GHG thresholds from CARB have yet to identify a performance standard for construction-related emissions for industrial or residential and commercial projects. Similarly, the SCAQMD has been working on GHG thresholds for development project as well. In December 2008, the SCAQMD adopted a threshold of 10,000 metric tonnes per year of CO_2 equivalents ($MTCO_2E$/yr) for stationary sources project for which SCAQMD was the lead agency. The most recent draft proposal was in November 2009 and included significance thresholds for residential, commercial, and mixed use projects at 3,500, 1,400, and 3,000 $MTCO_2E$/yr, respectively. The SCAQMD significance thresholds evaluate construction emissions by amortizing them over an expected project life of 30 years.

The following table summarizes the CalEEMod output results for construction-related GHG emissions and presents the emissions estimates in metric tonnes or tons (MT) (one MT equals approximately 2,205 pounds).

Project Construction Equipment GHG Emissions

Activity	Metric Tons per year (MT/yr)			
	Total CO_2	Total CH_4	Total N_2O	Total CO_2E[1]
Pipeline Construction	44.69	0.01	0.00	44.82
Pipeline Paving	1.54	0.00	0.00	1.55
Drainage Ditch Grading	2.86	0.00	0.00	2.87
Total	**49.09**	**0.01**	**0.00**	**49.24**

Note: [1] Total CO2E may not appear to equal the total of all GHG due to rounding within CalEEMod.

Evaluation of the table above indicates that an estimated 49.24 $MTCO_2E$ will occur from Project construction equipment over the course of the estimated construction period of 45 days. The proposed Project does not fit into the categories provided (industrial, commercial, and residential) in either the draft thresholds from CARB and SCAQMD. The Project's emissions will be compared to whichever threshold is more conservative. As stated above, the draft GHG threshold from CARB has yet to identify a performance standard for construction-related emissions for industrial or commercial and residential projects. The total CO_2 emissions from Project construction is below the lowest SCAQMD recommended screening level of 1,400 $MTCO_2E$/yr for commercial projects. Due to the lack of adopted emissions thresholds, the estimated amount of emissions from Project construction, and negligible operational emissions from infrequent maintenance vehicles, the proposed Project will not generate a significant amount of GHG emissions and the impact is considered to be less than significant.

REFERENCES

The following documents were referred to as general information sources during preparation of this document. They are available for public review at the locations abbreviated after each listing and spelled out at the end of this section. Some of these documents are also available at public libraries and at other public agency offices.

CARB 2008	California Air Resources Board, *Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*, October 24, 2008. (Available at http://www.arb.ca.gov/cc/localgov/ceqa/ceqa.htm , accessed July 19, 2011)
SCAQMD 2009	South Coast Air Quality Management District, *Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #14 (PowerPoint presentation)*, November 2009. (Available at http://www.aqmd.gov/ceqa/handbook/GHG/2009/nov19mtg/nov19.html, accessed on July 19, 2011)
SCAQMD 2008	South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, revised July 2008. (Available at http://www.aqmd.gov/ceqa/handbook/LST/LST.html , accessed July 19, 2011.)
SCAQMD 1993	South Coast Air Quality Management District, *CEQA Air Quality Handbook,* November 1993. (Available at SCAQMD.)
CalEEMod	ENVIRON International Corporation, **Cal**ifornia **E**missions **E**stimator **Mod**el version 2011.1.1, February 2011. (Available at http://www.caleemod.com/, accessed July 19, 2011.)
Location	**Address**
SCAQMD	South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765-4182

Cole Ave Storm Drain

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	0.3	Acre
Other Asphalt Surfaces	0.02	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Utility Company**	Riverside Public Utilities
Climate Zone	10	**Precipitation Freq (Days)**	28		

1.3 User Entered Comments

Project Characteristics -

Land Use - Pipeline Construction disturbance area = .3 acres
Low flow ditch area = .02 acres

Construction Phase - Pipeline Construction - 41 days, start: 7/1/12 end:8/27/12
Re-Paving Pipeline - 2 days, start: 8/28/12 end: 8/29/12
Grading Drainage Ditch - 2 days, start 9/3/12 end: 9/4/12

Off-road Equipment - Grading Drainage Ditch

Off-road Equipment - Not used.

Off-road Equipment - Construction equipment for pipeline construction

Off-road Equipment - Repaving equipment

Trips and VMT - Pipeline construction assumes 4 vendor trips/day
Repaving assumes 2 trips/day

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.94	32.57	18.39	0.03	6.09	1.95	7.60	3.31	1.95	4.83	0.00	3,158.35	0.00	0.35	0.00	3,165.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.94	32.57	18.39	0.03	2.41	1.95	3.93	1.29	1.95	2.81	0.00	3,158.35	0.00	0.35	0.00	3,165.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Pipeline Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.42	22.07	14.78	0.02		1.92	1.92		1.92	1.92		2,196.55		0.31		2,202.99
Total	**3.42**	**22.07**	**14.78**	**0.02**		**1.92**	**1.92**		**1.92**	**1.92**		**2,196.55**		**0.31**		**2,202.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.70	0.34	0.00	0.04	0.02	0.06	0.00	0.02	0.03		108.44		0.00		108.49
Worker	0.05	0.06	0.73	0.00	0.13	0.00	0.14	0.00	0.00	0.01		107.28		0.01		107.42
Total	**0.11**	**0.76**	**1.07**	**0.00**	**0.17**	**0.02**	**0.20**	**0.00**	**0.02**	**0.04**		**215.72**		**0.01**		**215.91**

3.2 Pipeline Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.42	22.07	14.78	0.02		1.92	1.92		1.92	1.92	0.00	2,196.55		0.31		2,202.99
Total	**3.42**	**22.07**	**14.78**	**0.02**		**1.92**	**1.92**		**1.92**	**1.92**	**0.00**	**2,196.55**		**0.31**		**2,202.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.70	0.34	0.00	0.04	0.02	0.06	0.00	0.02	0.03		108.44		0.00		108.49
Worker	0.05	0.06	0.73	0.00	0.13	0.00	0.14	0.00	0.00	0.01		107.28		0.01		107.42
Total	**0.11**	**0.76**	**1.07**	**0.00**	**0.17**	**0.02**	**0.20**	**0.00**	**0.02**	**0.04**		**215.72**		**0.01**		**215.91**

3.3 Re-Paving Pipeline - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.71	16.79	10.65	0.02		1.45	1.45		1.45	1.45		1,512.40		0.24		1,517.50
Paving	0.42					0.00	0.00		0.00	0.00						0.00
Total	**3.13**	**16.79**	**10.65**	**0.02**		**1.45**	**1.45**		**1.45**	**1.45**		**1,512.40**		**0.24**		**1,517.50**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.35	0.17	0.00	0.02	0.01	0.03	0.00	0.01	0.01		54.22		0.00		54.25
Worker	0.07	0.08	0.95	0.00	0.17	0.01	0.18	0.01	0.01	0.01		139.47		0.01		139.65
Total	**0.10**	**0.43**	**1.12**	**0.00**	**0.19**	**0.02**	**0.21**	**0.01**	**0.02**	**0.02**		**193.69**		**0.01**		**193.90**

3.3 Re-Paving Pipeline - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.71	16.79	10.65	0.02		1.45	1.45		1.45	1.45	0.00	1,512.40		0.24		1,517.50
Paving	0.42					0.00	0.00		0.00	0.00						0.00
Total	**3.13**	**16.79**	**10.65**	**0.02**		**1.45**	**1.45**		**1.45**	**1.45**	**0.00**	**1,512.40**		**0.24**		**1,517.50**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.35	0.17	0.00	0.02	0.01	0.03	0.00	0.01	0.01		54.22		0.00		54.25
Worker	0.07	0.08	0.95	0.00	0.17	0.01	0.18	0.01	0.01	0.01		139.47		0.01		139.65
Total	**0.10**	**0.43**	**1.12**	**0.00**	**0.19**	**0.02**	**0.21**	**0.01**	**0.02**	**0.02**		**193.69**		**0.01**		**193.90**

3.4 Grading Drainage Ditch - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.02	0.00	6.02	3.31	0.00	3.31						0.00
Off-Road	3.91	32.54	18.03	0.03		1.51	1.51		1.51	1.51		3,104.70		0.35		3,112.05
Total	**3.91**	**32.54**	**18.03**	**0.03**	**6.02**	**1.51**	**7.53**	**3.31**	**1.51**	**4.82**		**3,104.70**		**0.35**		**3,112.05**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.36	0.00	0.07	0.00	0.07	0.00	0.00	0.00		53.64		0.00		53.71
Total	**0.03**	**0.03**	**0.36**	**0.00**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**		**53.64**		**0.00**		**53.71**

3.4 Grading Drainage Ditch - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.35	0.00	2.35	1.29	0.00	1.29						0.00
Off-Road	3.91	32.54	18.03	0.03		1.51	1.51		1.51	1.51	0.00	3,104.70		0.35		3,112.05
Total	**3.91**	**32.54**	**18.03**	**0.03**	**2.35**	**1.51**	**3.86**	**1.29**	**1.51**	**2.80**	**0.00**	**3,104.70**		**0.35**		**3,112.05**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.36	0.00	0.07	0.00	0.07	0.00	0.00	0.00		53.64		0.00		53.71
Total	**0.03**	**0.03**	**0.36**	**0.00**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**		**53.64**		**0.00**		**53.71**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Other Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Other Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Cole Ave Storm Drain

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	0.3	Acre
Other Asphalt Surfaces	0.02	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Utility Company**	Riverside Public Utilities
Climate Zone	10	**Precipitation Freq (Days)**	28		

1.3 User Entered Comments

Project Characteristics -

Land Use - Pipeline Construction disturbance area = .3 acres
Low flow ditch area = .02 acres

Construction Phase - Pipeline Construction - 41 days, start: 7/1/12 end:8/27/12
Re-Paving Pipeline - 2 days, start: 8/28/12 end: 8/29/12
Grading Drainage Ditch - 2 days, start 9/3/12 end: 9/4/12

Off-road Equipment - Grading Drainage Ditch

Off-road Equipment - Not used.

Off-road Equipment - Construction equipment for pipeline construction

Off-road Equipment - Repaving equipment

Trips and VMT - Pipeline construction assumes 4 vendor trips/day
Repaving assumes 2 trips/day

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.93	32.57	18.35	0.03	6.09	1.95	7.60	3.31	1.95	4.83	0.00	3,152.45	0.00	0.35	0.00	3,159.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.93	32.57	18.35	0.03	2.41	1.95	3.93	1.29	1.95	2.81	0.00	3,152.45	0.00	0.35	0.00	3,159.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Pipeline Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.42	22.07	14.78	0.02		1.92	1.92		1.92	1.92		2,196.55		0.31		2,202.99
Total	**3.42**	**22.07**	**14.78**	**0.02**		**1.92**	**1.92**		**1.92**	**1.92**		**2,196.55**		**0.31**		**2,202.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.73	0.38	0.00	0.04	0.02	0.06	0.00	0.02	0.03		107.50		0.00		107.56
Worker	0.05	0.07	0.64	0.00	0.13	0.00	0.14	0.00	0.00	0.01		95.50		0.01		95.62
Total	**0.11**	**0.80**	**1.02**	**0.00**	**0.17**	**0.02**	**0.20**	**0.00**	**0.02**	**0.04**		**203.00**		**0.01**		**203.18**

3.2 Pipeline Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.42	22.07	14.78	0.02		1.92	1.92		1.92	1.92	0.00	2,196.55		0.31		2,202.99
Total	**3.42**	**22.07**	**14.78**	**0.02**		**1.92**	**1.92**		**1.92**	**1.92**	**0.00**	**2,196.55**		**0.31**		**2,202.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.73	0.38	0.00	0.04	0.02	0.06	0.00	0.02	0.03		107.50		0.00		107.56
Worker	0.05	0.07	0.64	0.00	0.13	0.00	0.14	0.00	0.00	0.01		95.50		0.01		95.62
Total	**0.11**	**0.80**	**1.02**	**0.00**	**0.17**	**0.02**	**0.20**	**0.00**	**0.02**	**0.04**		**203.00**		**0.01**		**203.18**

3.3 Re-Paving Pipeline - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.71	16.79	10.65	0.02		1.45	1.45		1.45	1.45		1,512.40		0.24		1,517.50
Paving	0.42					0.00	0.00		0.00	0.00						0.00
Total	**3.13**	**16.79**	**10.65**	**0.02**		**1.45**	**1.45**		**1.45**	**1.45**		**1,512.40**		**0.24**		**1,517.50**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.37	0.19	0.00	0.02	0.01	0.03	0.00	0.01	0.01		53.75		0.00		53.78
Worker	0.07	0.09	0.83	0.00	0.17	0.01	0.18	0.01	0.01	0.01		124.15		0.01		124.31
Total	**0.10**	**0.46**	**1.02**	**0.00**	**0.19**	**0.02**	**0.21**	**0.01**	**0.02**	**0.02**		**177.90**		**0.01**		**178.09**

3.3 Re-Paving Pipeline - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.71	16.79	10.65	0.02		1.45	1.45		1.45	1.45	0.00	1,512.40		0.24		1,517.50
Paving	0.42					0.00	0.00		0.00	0.00						0.00
Total	**3.13**	**16.79**	**10.65**	**0.02**		**1.45**	**1.45**		**1.45**	**1.45**	**0.00**	**1,512.40**		**0.24**		**1,517.50**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.37	0.19	0.00	0.02	0.01	0.03	0.00	0.01	0.01		53.75		0.00		53.78
Worker	0.07	0.09	0.83	0.00	0.17	0.01	0.18	0.01	0.01	0.01		124.15		0.01		124.31
Total	**0.10**	**0.46**	**1.02**	**0.00**	**0.19**	**0.02**	**0.21**	**0.01**	**0.02**	**0.02**		**177.90**		**0.01**		**178.09**

3.4 Grading Drainage Ditch - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.02	0.00	6.02	3.31	0.00	3.31						0.00
Off-Road	3.91	32.54	18.03	0.03		1.51	1.51		1.51	1.51		3,104.70		0.35		3,112.05
Total	**3.91**	**32.54**	**18.03**	**0.03**	**6.02**	**1.51**	**7.53**	**3.31**	**1.51**	**4.82**		**3,104.70**		**0.35**		**3,112.05**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.32	0.00	0.07	0.00	0.07	0.00	0.00	0.00		47.75		0.00		47.81
Total	**0.03**	**0.03**	**0.32**	**0.00**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**		**47.75**		**0.00**		**47.81**

3.4 Grading Drainage Ditch - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.35	0.00	2.35	1.29	0.00	1.29						0.00
Off-Road	3.91	32.54	18.03	0.03		1.51	1.51		1.51	1.51	0.00	3,104.70		0.35		3,112.05
Total	**3.91**	**32.54**	**18.03**	**0.03**	**2.35**	**1.51**	**3.86**	**1.29**	**1.51**	**2.80**	**0.00**	**3,104.70**		**0.35**		**3,112.05**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.32	0.00	0.07	0.00	0.07	0.00	0.00	0.00		47.75		0.00		47.81
Total	**0.03**	**0.03**	**0.32**	**0.00**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**		**47.75**		**0.00**		**47.81**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Other Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Other Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Cole Ave Storm Drain

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	0.3	Acre
Other Asphalt Surfaces	0.02	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Utility Company**	Riverside Public Utilities
Climate Zone	10	**Precipitation Freq (Days)**	28		

1.3 User Entered Comments

Project Characteristics -

Land Use - Pipeline Construction disturbance area = .3 acres
Low flow ditch area = .02 acres

Construction Phase - Pipeline Construction - 41 days, start: 7/1/12 end:8/27/12
Re-Paving Pipeline - 2 days, start: 8/28/12 end: 8/29/12
Grading Drainage Ditch - 2 days, start 9/3/12 end: 9/4/12

Off-road Equipment - Grading Drainage Ditch

Off-road Equipment - Not used.

Off-road Equipment - Construction equipment for pipeline construction

Off-road Equipment - Repaving equipment

Trips and VMT - Pipeline construction assumes 4 vendor trips/day
Repaving assumes 2 trips/day

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.08	0.52	0.35	0.00	0.01	0.04	0.05	0.00	0.04	0.05	0.00	49.09	49.09	0.01	0.00	49.23
Total	**0.08**	**0.52**	**0.35**	**0.00**	**0.01**	**0.04**	**0.05**	**0.00**	**0.04**	**0.05**	**0.00**	**49.09**	**49.09**	**0.01**	**0.00**	**49.23**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.08	0.52	0.35	0.00	0.01	0.04	0.05	0.00	0.04	0.04	0.00	49.09	49.09	0.01	0.00	49.23
Total	**0.08**	**0.52**	**0.35**	**0.00**	**0.01**	**0.04**	**0.05**	**0.00**	**0.04**	**0.04**	**0.00**	**49.09**	**49.09**	**0.01**	**0.00**	**49.23**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Pipeline Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.07	0.45	0.30	0.00		0.04	0.04		0.04	0.04	0.00	40.84	40.84	0.01	0.00	40.96
Total	**0.07**	**0.45**	**0.30**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**40.84**	**40.84**	**0.01**	**0.00**	**40.96**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	2.01	0.00	0.00	2.01
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.84	1.84	0.00	0.00	1.85
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.85**	**3.85**	**0.00**	**0.00**	**3.86**

3.2 Pipeline Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.07	0.45	0.30	0.00		0.04	0.04		0.04	0.04	0.00	40.84	40.84	0.01	0.00	40.96
Total	**0.07**	**0.45**	**0.30**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**40.84**	**40.84**	**0.01**	**0.00**	**40.96**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	2.01	0.00	0.00	2.01
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.84	1.84	0.00	0.00	1.85
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.85**	**3.85**	**0.00**	**0.00**	**3.86**

3.3 Re-Paving Pipeline - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.37**	**1.37**	**0.00**	**0.00**	**1.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.05
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.12
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.17**	**0.17**	**0.00**	**0.00**	**0.17**

3.3 Re-Paving Pipeline - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.37**	**1.37**	**0.00**	**0.00**	**1.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.05
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.12
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.17**	**0.17**	**0.00**	**0.00**	**0.17**

3.4 Grading Drainage Ditch - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.82	2.82	0.00	0.00	2.82
Total	**0.00**	**0.03**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**2.82**	**2.82**	**0.00**	**0.00**	**2.82**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.05
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.04**	**0.00**	**0.00**	**0.05**

3.4 Grading Drainage Ditch - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.82	2.82	0.00	0.00	2.82
Total	**0.00**	**0.03**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.82**	**2.82**	**0.00**	**0.00**	**2.82**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.05
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.04**	**0.00**	**0.00**	**0.05**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Other Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Other Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Other Asphalt Surfaces	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Other Asphalt Surfaces	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Other Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Other Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

APPENDIX B.1
Habitat Suitability Assessment

COLE AVENUE STORM DRAIN IMPROVEMENT PROJECT

FINAL

HABITAT SUITABILITY ASSESSMENT
APN 266-140-006, 266-140-030, 266-160-001
CITY OF RIVERSIDE, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:
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January 2012
AMEC Project No. 1155400454

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1.0 INTRODUCTION

1.1 Purpose and Need

AMEC Earth & Environmental, Inc. (AMEC) was contracted by Albert A. Webb Associates (Webb) to conduct a Habitat Suitability Assessment, Determination of Biologically Equivalent or Superior Preservation, Jurisdictional Delineation, and prepare reports for the Cole Avenue Storm Drain Improvement Project (Project), located in the City of Riverside, Riverside County, CA (Project). The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) requires specific biological assessments and reporting, which must be provided by the project proponent to obtain County approval for the Project. Specifically, the County is requiring the preparation of a MSHCP Compliance Report, and if Burrowing Owl (*Athene cunicularia*) suitable habitat is present, a Burrowing Owl burrow survey and focused surveys must be conducted.

1.2 Project and Property Description

The Project is located near the intersection of Lurin Avenue and Cole Avenue in the City of Riverside, Riverside County, CA (Figure 1). AMEC understands that the proposed Project will construct storm drain improvements between Lurin Avenue and Krameria Avenue on Cole Avenue as well as on some adjacent roadways located easterly of Cole Avenue. These improvements will convey runoff from the surrounding residential developments and discharge to a proposed outlet structure to be located on the southerly side of Lurin Avenue approximately 400 feet westerly of Cole Avenue (see Appendix 1, Site Plans from Webb). The only portion of the Project having the potential to impact biological resources is located on the southerly side of Lurin Avenue.

The portion of the Project potentially impacting biological resources is located within the Assessor Parcel Numbers (APN) 266-140-006, 266-140-030, and 266-160-001. A drainage is present on the south side of Lurin Avenue – east of Cole Avenue, the drainage is cement; west of Cole Avenue, the drainage is dirt; west of the unnamed driveway (near the proposed outlet structure), the drainage is cement. South of Lurin Avenue and the drainage, between Cole Avenue and the unnamed driveway, riparian vegetation dominated by willows (*Salix* sp.) is present; west of the unnamed driveway, cattails (*Typha* sp.) dominate. The areas south of the riparian vegetation are disturbed lots dominated by non-native grasses and vegetation. No oak trees are present on the property. The elevation ranges from approximately 1,683-1,694 feet. Soils are comprised of Monserate sandy loam, 0 to 5 percent slopes and Fallbrook fine sandy loam, 2 to 8 percent slopes (USDA 2011). Monserate sandy loam consists of well-drained soils that developed in alluvium from predominately granitic materials. This soil type occurs on terraces and old alluvial fans. Fallbrook fine sandy loam consists of well-drained soils that lie on uplands. This soil developed on granodiorite and tonalite. See Appendix 2 for site photographs.

2.0 METHODS

2.1 Records Search

Prior to the field survey, a records search was conducted to identify the historical occurrences of special-status species and/or habitats in the Project vicinity. The Riverside County Land Information System (LIS; APN 266-140-006, 266-140-030, and 266-160-001) and the California Department of Fish and Game's (CDFG) California Natural Diversity Data Base (CNDDB; United States Geological Survey [USGS] Riverside East and Steele Peak 7.5-minute series topographic quadrangles) were queried.

2.2 Habitat Suitability Assessment

AMEC wildlife biologist Matt Amalong conducted a site survey on May 3, 2011. The weather conditions were 75-80 degrees Fahrenheit, 0 percent cloud cover, and winds at 0-5 mph from the east. Data were collected by the use of a hand-held Global Positioning System (GPS), photographs, and aerial field maps.

The Project site and a 500-foot buffer (where possible and appropriate based on habitat) were surveyed to assess the presence of special-status species and habitats. Pedestrian survey transects were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 100 feet and was reduced to account for differences in terrain, vegetation density, and ground surface visibility.

3.0 RESULTS

3.1 Records Search

The Project is located within the Lake Mathews/Woodcrest Area Plan of the MSHCP. However, the Project is not located within a Subunit or Criteria Cell of the Area Plan. The Riverside County LIS (Riverside County Transportation and Land Management Agency 2011) identified that potential habitats for amphibian species, Criteria Area species, mammalian species, narrow endemic plant species, and special linkage areas were not present, but a Burrowing Owl habitat assessment was required (see Appendix 3 for LIS report).

CNDDB records indicated the historical presence of 52 special-status species and habitats (see Appendix 3 for CNDDB list) within the Riverside East and Steele Peak USGS quadrangles (CDFG 2011).

3.2 Habitat Suitability Assessment

AMEC conducted a habitat suitability assessment for special-status species and habitats reported for the area. No special-status species were observed during the survey; however,

the riparian habitat dominated by willows (Southern Willow Scrub) is suitable for Least Bell's Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*), both federal- and State-Endangered species. There are no suitable burrows or burrowing animals present (*e.g.*, California Ground Squirrels [*Spermophilus beecheyi*]), so there is no suitable habitat for Burrowing Owls present. Adjacent properties include developed and disturbed lots unsuitable for Burrowing Owls and other special-status species.

Species observed during the survey included:

- Killdeer (*Charadrius vociferus*) – adults with one chick observed in drainage south of Lurin Avenue
- Mourning Dove (*Zenaida macroura*)
- Western Kingbird (*Tyrannus verticalis*)
- American Crow (*Corvus brachyrhynchos*)
- Common Raven (*Corvus corax*)
- Cliff Swallow (*Petrochelidon pyrrhonota*)
- Common Yellowthroat (*Geothlypis trichas*)
- Song Sparrow (*Melospiza melodia*)
- Red-winged Blackbird (*Agelaius phoeniceus*) – adults with fledglings observed in cattails at proposed outlet structure
- House Sparrow (*Passer domesticus*)

4.0 MSHCP COMPLIANCE

4.1 Riparian/Riverine Areas, Vernal Pools, and Fairy Shrimp

There is Southern Willow Scrub habitat south of Lurin Avenue and west of Cole Avenue. The Riparian/Riverine Areas and Vernal Pools policy described in the MSHCP provides for conservation of wetlands which provide habitat for Least Bell's Vireo and Southwestern Willow Flycatcher through avoidance and minimization. Mitigation for impacts to wetlands shall be incorporated in accordance with the "No Net Loss" policy of federal and state wetland regulations. The proposed mitigation shall be directly related to the functions and values of the wetland as related to these species and result in equivalent replacement.

A Determination of Biologically Equivalent or Superior Preservation (DBESP) was conducted by AMEC – see Appendix 4 for report. The proposed design will allow the project to be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures.

4.2 Jurisdictional Waters/Wetlands

The cattails are potentially a part of a Freshwater Wetland. Projects that affect wetland vegetation communities shall be required to comply with the applicable regulatory standards related to wetlands functions and values. Many wetland communities within the Plan Area include areas subject to California Fish and Game (CFG) Code Section 1600 *et seq.* and the federal Clean Water Act (Sections 401, 402, and 404). Such areas will continue to be

regulated by state and federal agencies. The U.S. Army Corps of Engineers (ACOE) shall continue to consult with the United States Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Federal Endangered Species Act (FESA) on projects that may affect federally listed species within ACOE jurisdictional wetlands and waters. The CDFG shall continue to work closely with ACOE, USFWS, and local jurisdictions to ensure that the CFG Code Section 1600 *et seq.* agreements are consistent with the mitigation required for covered species.

A Jurisdictional Delineation was conducted by AMEC – see Appendix 5 for report. The area of concern contains one jurisdictional drainage with three distinct segments. Segment 1 is located on the southeast corner of Cole Avenue and Lurin Avenue. Segment 1 was determined to not be a wetland due to a lack of hydric soils and hydric vegetation. Segment 2 is located along the south side of Lurin Avenue between Cole Avenue and a residential driveway. Segment 2 was classified as wetland Waters of the United States (WUS). Segment 3 is located on APN 266-140-006 and the public right-of-way (ROW) directly north of this parcel along Lurin Avenue. The upstream portion of Segment 3 exhibited wetland characteristics. The downstream portion of Segment 3 was determined to be non-jurisdictional due to the absence of an ordinary high water mark. The wetland containing dense cattails in Segment 3 appears to substantially reduce flow velocity causing water to flow underground and likely surfaces again downstream. There was no CDFG jurisdiction south of the wetland due to a lack of streambed and bank and a lack of riparian vegetation. There will be no direct impacts to jurisdictional areas resulting from construction of the proposed project.

4.3 Sage Scrub

No sage scrub habitat is present on or adjacent to the Project.

4.4 Urban/Wildlands Interface

The Urban/Wildlands Interface is intended to address indirect effects associated with development in proximity to the MSHCP Conservation Area. This Project is not adjacent or near any Conservation Areas.

4.5 Burrowing Owl

Burrowing Owls are not present on or around the Project because of a lack of suitable habitat and burrows; therefore, no further surveys (*i.e.*, focused burrow survey, focused Burrowing Owl surveys) are required.

5.0 RECOMMENDATIONS

Because of the riparian vegetation and trees present, and the fact that Killdeer chicks and Red-winged Blackbird fledglings were observed, there is a high likelihood of nesting birds being present during the nesting season (generally February 1 through August 31). Nesting birds are protected under the Migratory Bird Treaty Act (MBTA). To comply with the MBTA, any vegetation removal or grading occurring during the nesting season would require a nesting bird survey to be conducted by a qualified biologist immediately prior to the initiation

of construction activities. If no nests are found, construction would proceed. If nests are found, impact avoidance measures (*e.g.*, buffers) will be required until young have fledged.

If construction activities are scheduled to occur on or near Lurin Avenue during the nesting season, Least Bell's Vireo and Southwestern Willow Flycatcher protocol surveys (USDI 2001 and USFWS 2000, respectively) shall be conducted by a qualified biologist prior to the initiation of construction activities to determine presence/absence and evaluate Project impacts to these species.

6.0 REFERENCES

California Department of Fish and Game (CDFG). 2011. California Natural Diversity Data Base, Rarefind 3, Version 3.1.0.

Riverside County Transportation and Land Management Agency. 2011. Online database http://www3.tlma.co.riverside.ca.us/pa/rclis/index.html.

United States Department of Agriculture (USDA). 2011. Natural Resources Conservation Service. Web Soil Survey. Online database http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.

United States Department of the Interior (USDI). 2001. Least Bell's Vireo Survey Guidelines. Fish and Wildlife Service, Ecological Services, Carlsbad Fish and Wildlife Office.

United States Fish and Wildlife Service (USFWS). 2000. Southwestern Willow Flycatcher Protocol Revision 2000.

FIGURES

S:\active projects\Cole Ave. Storm Drain 1155400454\graphics\maps, CADD: A.A. WEBB

amec

Regional Location
Cole Avenue Storm Drain Improvement Project

FIGURE
1

APPENDIX 1

SITE PLANS (WEBB)

Cole Ave Storm Drain - Bio Study Areas

APPENDIX 2

SITE PHOTOGRAPHS

Photograph 1. Looking west at drainage south of Lurin Ave, east of Cole Ave.

Photograph 2. Looking west at drainage south of Lurin Ave, west of Cole Ave.

Photograph 3. Looking west at drainage and willow habitat south of Lurin Ave.

Photograph 4. Looking east from driveway at drainage and willow habitat south of Lurin Ave.

Photograph 5. Drainage west of unnamed driveway (proposed outlet structure).

Photograph 6. Looking west from Cole Ave at willow habitat in background.

Photograph 7. Looking southeast from west of driveway at cattails (proposed outlet structure).

APPENDIX 3

RECORDS SEARCH REPORTS

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

APN	Cell	Cell Group	Acres	Area Plan	Sub Unit
266140006	Not A Part	Independent	4.6	Lake Mathews / Woodcrest	Not a Part
266140030	Not A Part	Independent	8.25	Lake Mathews / Woodcrest	Not a Part
266160001	Not A Part	Independent	9.04	Lake Mathews / Woodcrest	Not a Part

HABITAT ASSESSMENTS

Habitat assessment shall be required and should address at a minimum potential habitat for the following species:

APN	Amphibia Species	Burrowing Owl	Criteria Area Species	Mammalian Species	Narrow Endemic Plant Species	Special Linkage Area
266140006	NO	**YES**	NO	NO	NO	NO
266140030	NO	**YES**	NO	NO	NO	NO

Burrowing Owl

Burrowing owl.

If potential habitat for these species is determined to be located on the property, focused surveys may be required during the appropriate season.

Background

The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004.

For more information concerning the MSHCP, contact your local city or the County of Riverside for the unincorporated areas. Additionally, the Western Riverside County Regional Conservation Authority (RCA), which oversees all the cities and County implementation of the MSHCP, can be reached at:

Western Riverside County Regional Conservation Authority
3403 10th Street, Suite 320
Riverside, CA 92501

Phone: 951-955-9700
Fax: 951-955-8873

www.wrc-rca.org

Introduction

As urbanization has increased within western Riverside County, state and federal regulations have required that public and private developers obtain "Take permits" from Wildlife Agencies for impacts to endangered, threatened, and rare species and their Habitats. This

process, however, has resulted in costly delays in public and private Development projects and an assemblage of unconnected Habitat areas designated on a project-by-project basis. This piecemeal and uncoordinated effort to mitigate the effects of Development does not sustain wildlife mobility, genetic flow, or ecosystem health, which require large, interconnected natural areas.

A variety of capitalized terms are used in this report. Definitions for those terms are provided at the end of this report.

The MSHCP is a criteria-based plan, focused on preserving individual species through Habitat conservation. The MSHCP is one element of the Riverside County Integrated Project (RCIP), a comprehensive regional planning effort begun in 1999.The purpose of the RCIP is to integrate all aspects of land use, transportation, and conservation planning and implementation in order to develop a comprehensive vision for the future of the County. The overall goal of the MSHCP is rooted in the RCIP Vision Statement and supporting policy directives. The MSHCP will enhance maintenance of biological diversity and ecosystem processes while allowing future economic growth. Preserving a quality of life characterized by well-managed and well-planned growth integrated with an open-space system is a component of the RCIP vision. The MSHCP proposes to conserve approximately 500,000 acres and 146 different species. Approximately 347,000 acres are anticipated to be conserved on existing Public/Quasi-Public Lands, with additional contributions on approximately 153,000 acres from willing sellers. The overall goal of the MSHCP can be supported by the following:

Biological Goal: In the MSHCP Plan Area, conserve Covered Species and their Habitats.

Economic Goal: Improve the future economic development in the County by providing an efficient, streamlined regulatory process through which Development can proceed in an efficient way. The MSHCP and the General Plan will provide the County with a clearly articulated blueprint describing where future Development should and should not occur.

Social Goal: Provide for permanent open space, community edges, and recreational opportunities, which contribute to maintaining the community character of Western Riverside County.

This report has been generated to summarize the guidance in the MSHCP Plan that pertains to this property. Guidelines have been incorporated in the MSHCP Plan to allow applicants to evaluate the application of the MSHCP Criteria within specific locations in the MSHCP Plan Area. Guidance is provided through Area Plan Subunits, Cell Criteria, Cores and Linkages and identification of survey requirements. The guidance and Criteria incorporate flexibility at a variety of levels. The information within this report is composed of three parts: a summary table, Reserve Assembly guidance and survey requirements within the MSHCP Plan Area. The summary table provides specific information on this property to help determine whether it is located within the MSHCP Criteria Area or any survey areas. The Reserve Assembly guidance provides direction on assembly of the MSHCP Conservation Area if the property is within the Criteria Area. The survey requirements section describes the surveys that must be conducted on the property if Habitat is present for certain identified species within the Criteria Area or mapped survey areas.

Reserve Assembly Guidance within the Criteria Area

The Reserve Assembly guidance only pertains to properties that are within the Criteria Area. Please check the summary table to determine whether this property is within the Criteria Area. If it is located inside of the Criteria Area, please read both this section and the section about survey requirements within the MSHCP Plan Area. If the property is located outside the Criteria Area, only read the survey requirements within the MSHCP Plan Area section.

The Area Plan Subunits, Cell Criteria and Cores and Linkages provide guidance on assembly of the MSHCP Conservation Area. The Area Plan Subunits section lists Planning Species and Biological Issues and Considerations that are important to Reserve Assembly within a specific Area Plan Subunit. The Cell Criteria identify applicable Cores or Linkages and describe the focus of desired conservation within a particular Cell or Cell Group. Cores and Linkages guidance includes dimensional data and biological considerations within each identified Core or Linkage.

The following is the Area Plan text and Cell Criteria that pertains specifically to this property. The Area Plan text includes the target acreage for conservation within the entire Area Plan, identification of Cores and Linkages within the entire Area Plan and Area Plan Subunit Planning Species and Biological Issues and Considerations. It is important to keep in mind that the Area Plan Subunits, Cell Criteria and Cores and Linkages are drafted to provide guidance for a geographic area that is much larger than an individual property. The guidance is intended to provide context for an individual property and, therefore, all of the guidance

and Criteria do not apply to each individual property.

Lake Mathews/Woodcrest Area Plan

This section identifies target acreages, applicable Cores and Linkages, Area Plan Subunits and Criteria for the Lake Mathews/Woodcrest Area Plan. For a summary of the methodology and map resources used to develop the target acreages and Criteria for the MSHCP Conservation Area, including this Area Plan, see Section 3.3.1.

Target Acreages

The target conservation acreage range for the Lake Mathews/Woodcrest Area Plan is 16,695 – 18,950 acres; it is composed of approximately 13,480 acres of existing Public/Quasi-Public Lands and 3,215 – 5,470 acres of Additional Reserve Lands.

Applicable Cores and Linkages

The MSHCP Conservation Area comprises a variety of existing and proposed Cores, Linkages, Constrained Linkages and Noncontiguous Habitat Blocks (referred to here as "Cores and Linkages"). The Cores and Linkages listed below are within the Lake Mathews/Woodcrest Area Plan. For descriptions of these Cores and Linkages and more information about the biologically meaningful elements of the MSHCP Conservation Area within the Lake Mathews/Woodcrest Area Plan, see Section 3.2.3 and MSHCP Volume II, Section A.

Cores and Linkages within Lake Mathews/Woodcrest Area Plan
- Contains a small portion of Proposed Core 1
- Contains a portion of Proposed Extension of Existing Core 2
- Contains a portion of Proposed Linkage 3

Descriptions of Planning Species, Biological Issues and Considerations and Criteria for each Area Plan Subunit within the Lake Mathews/Woodcrest Area Plan are presented later in this section. These descriptions, combined with the descriptions of the Cores and Linkages referred to above, provide information about biological issues to be considered in conjunction with Reserve Assembly within the Lake Mathews/Woodcrest Area Plan. As noted in Section 3.1, the Area Plan boundaries established as part of the Riverside County General Plan were selected to provide an organizational framework for the Area Plan Subunits and Criteria. While these boundaries are not biologically based, unlike the Cores and Linkages, they relate specifically to General Plan boundaries and the jurisdictional boundaries of incorporated Cities and were selected to facilitate implementation of the MSHCP in the context of existing institutional and planning boundaries.

Area Plan Subunits

The Lake Mathews/Woodcrest Area Plan is divided into four Subunits. For each Subunit, target conservation acreages are established along with a description of the Planning Species, Biological Issues and Considerations, and Criteria for each Subunit. For more information regarding specific conservation objectives for the Planning Species, see Section 9.0. Subunit boundaries are depicted on the Cells and Cell Groupings map displays (Figures 3-14 and 3-15). Table 3-8 presents the Criteria for the Lake Mathews/Woodcrest Area Plan.

Cell Criteria

A preliminary check indicates that this parcel is not subject to cell criteria under the draft MSHCP. Other requirements, including species surveys, may apply under the plan. It is recommended that you review the full text of the draft document for additional details. See www.rcip.org to read the document on-line or to find a location to view the hard copy document.

Surveys Within the MSHCP Plan Area

Of the 146 species covered by the MSHCP, no surveys will be required by applicants for public and private projects for 106 of these Covered Species. Covered Species for which surveys may be required by applicants for public and private Development projects include 4 birds, 3 mammals, 3 amphibians, 3 crustaceans, 14 Narrow Endemic Plants, and 13 other sensitive plants within the Criteria Area. Of these 40 species, survey area maps are provided

for 34 species, and surveys will be undertaken within suitable Habitat areas in locations identified on these maps in the MSHCP Plan. The remaining six species are associated with riparian/riverine areas and vernal pools and include least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, Riverside fairy shrimp, Santa Rosa Plateau fairy shrimp, and vernal pool fairy shrimp. Although there are no survey area maps for these six species, surveys for these species, if necessary, will be undertaken as described below. It is the goal of the MSHCP to provide for conservation of Covered Species within the approximately 500,000 acre MSHCP Conservation Area (comprised of approximately 347,000 acres of existing Public/Quasi-Public Lands and 153,000 acres of new conservation on private lands). Conservation that may be identified to be desirable as a result of survey findings is not intended to increase the overall 500,000 acres of conservation anticipated under the MSHCP. Please refer to Section 6.0 of the MSHCP Plan, Volume I for more specific information regarding species survey requirements.

As projects are proposed within the MSHCP Plan Area, an assessment of the potentially significant effects of those projects on riparian/riverine areas and vernal pools will be performed as currently required by the California Environmental Quality Act (CEQA) using available information augmented by project-specific mapping. If the mapping identifies suitable habitat for any of the six species associated with riparian/riverine areas and vernal pools listed above and the proposed project design does not incorporate avoidance ofthe identified habitat, focused surveys for these six species will be conducted, and avoidance and minimization measures will be implemented in accordance with the species-specific objectives for these species. For more specific information regarding survey requirements for species associated with riparian/riverine areas and vernal pools, please refer to Section 6.1.2 of the MSHCP Plan, Volume I .

Habitat conservation is based on the particular Habitat requirements of each species as well as the known distribution data for each species. The existing MSHCP database does not, however, provide the level of detail sufficient to determine the extent of the presence or distribution of Narrow Endemic Plant Species within the MSHCP Plan Area. Since conservation planning decisions for these plant species will have a substantial effect on their status, additional information regarding the presence of these plant species must be gathered during the long-term implementation of the MSHCP to ensure that appropriate conservation of the Narrow Endemic Plants occurs. For more specific information regarding survey requirements for Narrow Endemic Plants, please refer to Section 6.1.3 of the MSHCP Plan, Volume I .

In addition to the Narrow Endemic Plant Species, additional surveys may be needed for certain species in conjunction with Plan implementation in order to achieve coverage for these species. The MSHCP must meet the Federal Endangered Species Act issuance criteria for Habitat Conservation Plans (HCP) which require, among other things, that the HCP disclose the impacts likely to result from the proposed Taking, and measures the applicant will undertake to avoid, minimize and mitigate such impacts. For these species in which coverage is sought under the MSHCP, existing available information is not sufficient to make findings necessary to satisfy these issuance criteria for Take authorization. Survey requirements are incorporated in the MSHCP to provide the level of information necessary to receive coverage for these species in the MSHCP.

Efforts have been made prior to approval of the MSHCP and will be made during the early baseline studies to be conducted as part of the MSHCP management and monitoring efforts to collect as much information as possible regarding the species requiring additional surveys. As data are collected and conclusions can be made regarding the presence of occupied Habitat within the MSHCP Conservation Area for these species, it is anticipated that survey requirements may be modified or waived. Please refer to Sections 6.1.3 and 6.3.2 of the MSHCP Plan, Volume I for more specific information regarding survey requirements.

MSHCP DEFINITIONS

Adaptive Management	To use the results of new information gathered through the Monitoring Program of the Plan and from other sources to adjust management strategies and practices to assist in providing for the Conservation of Covered Species.
Adaptive Management Program	The MSHCP's program of Adaptive Management described in Section 5.0 of the MSHCP, Volume I.
Additional Reserve Lands	Conserved Habitat totaling approximately 153, 000 acres that are needed to meet the goals and objectives of the MSHCP and comprised of approximately 56, 000 acres of State and federal acquisition and mitigation for State Permittees, and approximately 97, 000 acres contributed by Local Permittees (Lands acquired since February 3, 2000 are included in the Local Permittees'

	Additional Reserve Lands contribution pursuant to correspondence discussed in Section 4.0 of the MSHCP, Volume I and on file with the County of Riverside)
Agriculture	For the species analyses, references to agriculture refer to the Vegetation Community, Agriculture, as depicted on the MSHCP Vegetation Map, Figure 2- 1 of the MSHCP, Volume I.
Agricultural Operations	The production of all plants (horticulture), fish farms, animals and related production activities, including the planting, cultivation and tillage of the soil, dairying, and apiculture; and the production, plowing, seeding, cultivation, growing, harvesting, pasturing and fallowing for the purpose of crop rotation of any agricultural commodity, including viticulture, apiculture, horticulture, and the breeding, feeding and raising of livestock, horses, fur-bearing animals, fish, or poultry, the operation, management, conservation, improvement or maintenance of a farm or ranch and its buildings, tools and equipment; the construction, operation and maintenance of ditches, canals, reservoirs, wells and/or waterways used for farming or ranching purposes and all uses conducted as a normal part of such Agricultural Operations; provided such actions are in compliance with all applicable laws and regulations. The definition of Agricultural Operations shall not include any activities on state and federal property or in the MSHCP Conservation Area.
Allowable Uses	Uses allowed within the MSHCP Conservation Area as defined in Section 7.0 of the MSHCP, Volume I.
Annual Report	The reports prepared pursuant to the requirements of Section 6.11 of the MSHCP, Volume I.
Area Plan	A community planning area defined in the County of Riverside General Plan. Sixteen County of Riverside Area Plans are located within the MSHCP Plan Area.
Area Plan Subunit	A portion of an Area Plan for which Biological Issues and Considerations and target acreages have been specified in Section 3.3 of the MSHCP, Volume I.
Biological Issues and Considerations	A list of biological factors to be used by the Plan Participants in assembly of the MSHCP Conservation Area. Biological Issues and Considerations are identified for each Area Plan Subunit in Section 3.3 of the MSHCP, Volume I.
Biologically Equivalent or Superior Determination	Documentation that a particular project alternative will be biologically equivalent or superior to a project consistent with the guidelines and thresholds established in the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools set forth in Section 6.1.2 of the MSHCP, policies for the Protection of Narrow Endemic Plant Species set forth in Section 6.1.3 of the MSHCP, Additional Survey Needs and Procedures policies set forth in Section 6.3.2 of the MSHCP, and the Criteria Refinement Process set forth in Section 6.5 of the MSHCP.
Biological Monitoring Program	The program detailing the requirements for monitoring of the MSHCP Conservation Area as set forth in Section 5.3 of the MSHCP, Volume I.
Biological Monitoring Report	Reports prepared pursuant to the requirements of Section 5.3.7 of the MSHCP, Volume I.
Bioregion	A generalized area with similar elevation, topography, soils and floristic characteristics within the MSHCP Plan Area. Seven Bioregions are identified in the MSHCP Plan Area and are depicted in Figure 2-6 of the MSHCP, Volume I.
California Department of Fish and Game	CDFG, a department of the California Resources Agency.
California Department of Transportation	Caltrans, a department of the California Business, Transportation and Housing Agency.
Cell	A unit within the Criteria Area generally 160 acres in size, approximating one quarter section.

Cell Group	An identified grouping of Cells within the Criteria Area.
California Environmental Quality Act	CEQA (California Public Resources Code, Section 21000 et seq.) and all guidelines promulgated thereunder, as amended. For the MSHCP, the County shall be the lead agency under CEQA as defined under State CEQA Guidelines section 15367.
California Endangered Species Act	CESA (California Fish and Game code, Section 2050 et seq.) and all rules, regulations and guidelines promulgated thereunder, as amended.
Changed Circumstances	Changes in circumstances affecting a Covered Species or the geographic area covered by the MSHCP that can reasonably be anticipated by the Parties and that can reasonably be planned for in the MSHCP. Changed Circumstances and the planned responses to those circumstances are more particularly described in Section 11.4 of the IA, and Section 6.8 of the MSHCP, Volume I. Changed Circumstances do not include Unforeseen Circumstances.
Cities	The cities of Banning, Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, and Temecula, collectively.
Community and Environmental Transportation Acceptability Process	CETAP, a process overseen by RCTC to identify Acceptability Process future transportation and communication corridors designed to relieve current traffic congestion and provide for the County's and the Cities' future transportation and communication needs.
Conceptual Reserve Design	A reserve concept developed for purposes of providing quantitative parameters for MSHCP species analyses, MSHCP Conservation Area description and target acreages within Area Plan Subunits. The Conceptual Reserve Design is intended to describe one way in which the Additional Reserve Lands could be assembled consistent with MSHCP Criteria.
Conservation	To use, and the use of, methods and procedures within the MSHCP Conservation Area and within the Plan Area as set forth in the MSHCP Plan, that are necessary to bring any listed species to the point at which the measures provided pursuant to FESA and the California Fish and Game Code are no longer necessary. However, Permittees will have no duty to enhance, restore or revegetate MSHCP Conservation Area lands unless required by the MSHCP Plan or agreed to through implementation of the Plan.
Conservation Strategy	The overall approach to assure conservation of individual species within the MSHCP Plan Area; for each individual species, the Conservation Strategy is comprised of four elements: (1) a global conservation goal; (2) global conservation objectives; (3) species-specific conservation objectives that are measurable; and (4) management and monitoring activities.
Conserved Habitat	Land that is permanently protected and managed in its natural state for the benefit of the Covered Species under legal arrangements that prevent its conversion to other land uses, and the institutional arrangements that provide for its ongoing management.
Constrained Linkage	A constricted connection expected to provide for movement of identified Planning Species between Core Areas, where options for assembly of the connection are limited due to existing patterns of use.
Cooperative Organizational Structure	The local administrative structure for Implementation and management of the MSHCP, as set forth in Section 6.6 of the MSHCP, Volume I.
Core Area	A block of Habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more Covered Species.
Corridor	Refers to the alignment area or footprint for manmade linear projects such as transportation facilities, pipelines and utility lines. Corridor does not have a biological meaning in the MSHCP lexicon.

County	County of Riverside
County Flood Control	Riverside County Flood Control and Water Conservation District
County Parks	Riverside County Regional Parks and Open Space District
County Waste	Riverside County Waste Management District
Covered Activities	Certain activities carried out or conducted by Permittees, Participating Special Entities, Third Parties Granted Take Authorization and others within the MSHCP Plan Area, and described in Section 7 of the MSHCP, Volume I, that will receive Take Authorization under the Section 10(a) Permit and the NCCP Permit, provided these activities are otherwise lawful.
Covered Species	The current 146 species within the MSHCP Plan Area that will be conserved by the MSHCP when the MSHCP is implemented. These species are discussed in Section 2.1.4 of the MSHCP, Volume I, and listed in Exhibit C to the IA and Section 9.2 of the MSHCP, Volume I.
Covered Species Adequately Conserved	The initial 118 Covered Species and any of the remaining 28 Covered Species where the species objectives, set forth in Section 9.2 of the MSHCP, Volume I and Table 9-3, are met and which are provided Take Authorization through the NCCP Permit and for animals through the Section 10(a) Permit issued in conjunction with the IA. These species are discussed in Section 2.1.4 of the MSHCP, Volume I, and listed in Exhibit "D" to the IA and Section 9.2 of the MSHCP, Volume I.
Criteria	Descriptions provided for individual Cells or Cell Groups within the Criteria Area to guide assembly of the Additional Reserve Lands.
Criteria Area	The area comprised of Cells depicted on Figure 3-1 of the MSHCP, Volume I.
Criteria Refinement Process	The process through which changes to the Criteria may be made, where the refined Criteria result in the same or greater Conservation value and acreage to the MSHCP Conservation Area as determined through an equivalency analysis provided in support of the refinement.
Critical Habitat	Habitat for species listed under FESA that has been designated pursuant to Section 4 of FESA and identified in 50 C.F.R. §§ 17.95 and 17.96.
Development	The uses to which land shall be put, including construction of buildings, structures, infrastructure and all alterations of the land.
Discretionary Project	A proposed project requiring discretionary action or approval by a Permittee, as that term is used in CEQA and defined in State CEQA Guidelines section 15357, including issuance of a grading permit for County projects.
Edge Effects	Adverse direct and indirect effects to species, Habitats and Vegetation Communities along the natural urban/wildslands interface. May include predation by mesopredators (including native and non-native predators), invasion by exotic species, noise, lighting, urban runoff and other anthropogenic impacts (trampling of vegetation, trash and toxic materials dumping, etc.).
Effective Date	Date on which the IA takes effect, as set forth in Section 19.1 of the IA.
Endangered Species	Those species listed as endangered under FESA and CESA.
Environmental Laws	Includes state and federal laws governing or regulating the impact of development activities on land, water or biological resources as they relate to Covered Species, including but not limited to

	CESA, FESA, the NCCP Act, CEQA, the National Environmental Policy Act ("NEPA"), the federal Migratory Bird Treaty Act ("MBTA"), the Fish and Wildlife Coordination Act, the Fish and Wildlife Act of 1956, the Federal Water Pollution Control Act (33 U.S.C., Section 1251 et seq.), the Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq. and Sections 1801, 1802, 3511, 4700, 5050 and 5515) and includes any regulations promulgated pursuant to such laws.
Executive Director	Director of the Regional Conservation Authority
Existing Agricultural Operations	Those lands within the MSHCP Plan Area that are actively used for ongoing Agricultural Operations, as further defined in Section 11.3 of the IA and Section 6.2 of the MSHCP, Volume I.
Existing Agricultural Operations Database	The database created by the County to identify Existing Agricultural Operations, as further defined in Section 11.3 of the IA.
Federal Endangered Species Act	FESA (16 U.S.C., Section 1531 et seq.) And all rules and regulations promulgated thereunder, as amended.
Feasible	Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.
Funding Coordination Committee	A committee formed by the Regional Conservation Authority Board of Directors to provide input on local funding priorities and Additional Reserve Land acquisitions.
Habitat	The combination of environmental conditions of a specific place providing for the needs of a species or a population of such species.
HabiTrak	A GIS application to provide data on Habitat loss and Conservation which occurs under the Permits.
Implementing Agreement	The executed agreement that implements the terms and conditions of the MSHCP.
Incidental Take (also see Take)	Take of Covered Species Adequately Conserved incidental to and not the purpose of, an otherwise lawful activity, including, but not limited to, Take resulting from modification of Habitat as defined in FESA and its implementing regulations.
Independent Science Advisors	The qualified biologists, conservation experts and others that may be appointed by the Regional Conservation Authority Executive Director to provide scientific input to assist in the implementation of the MSHCP for the benefit of the Covered Species, as set forth in Section 6.6.7 of the MSHCP, Volume I.
Linkage	A connection between Core Areas with adequate size, configuration and vegetation characteristics to generally provide for "Live-In" Habitat and/or provide for genetic flow for identified Planning Species.
Live-In Habitat	Habitat that contains the necessary components to support key life history requirements of a species; e.g., year-round Habitat for permanent residents or breeding Habitat for migrant species.
Local Development Mitigation Fee	The fee imposed by applicable Local Permittees on new development pursuant to Government Code Section 66000 et seq.
Local Permittees	The Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC and the Cities.
Locality(ies)	An area with multiple occurrences of a species based on the MSHCP species occurrence data

	base or literature citations as noted in individual species accounts.
Long-Term Stephens' Kangaroo Rat	The Long-Term SKR HCP in Western Riverside County dated Habitat Conservation Plan. March 1996, more particularly described in Section 16.2 of the IA.
Maintenance Activities	Those Covered Activities that include the on going maintenance of public facilities as described in Section 7.0 of the MSHCP, Volume I.
Major Amendments	Those proposed amendments to the MSHCP and the IA as described in Section 20.5 of the IA and Section 6.10 of the MSHCP, Volume I.
Management Unit	Broad areas planned to be consolidated for overall unified management of the MSHCP Conservation Area. Five management units have been defined and are depicted in Figure 5-1 of the MSHCP, Volume I.
Migratory Bird Treaty Act	Federal MBTA (16 U.S.C., Section 702 et seq.) and all rules and regulations promulgated thereunder, as amended.
Migratory Bird Treaty Special Purpose Permit	Act A permit issued by the USFWS under 50 Code of Federal Regulations, section 21.27, authorizing Take under the MBTA of the Covered Species Adequately Conserved listed as endangered or threatened under FESA in connection with the Covered Activities.
Ministerial Approvals	Certain City approvals involving little or no judgement by the City prior to issuance but that could have adverse impacts to Covered Species and their habitat.
Minor Amendments	Minor changes to the MSHCP and the IA as defined in Section 20.4 of the IA and Section 6.10 of the MSHCP, Volume I.
Mitigation Lands	Subset of Additional Reserve Lands totaling approximately 103, 000 acres, comprised of approximately 97, 000 acres contributed by Local Permittees, and approximately 6, 000 acres contributed by State Permittees.
Monitoring Program	The monitoring programs and activities set forth in Section 5.3 of the MSHCP, Volume I.
Monitoring Program Administrator	The individual or entity responsible for administering the Monitoring Program, as described in Section 5.0 of the MSHCP, Volume I.
MSHCP Conservation Area	Approximately 500, 000 acres comprised of approximately 347, 000 acres of Public/Quasi-Public Lands and approximately 153, 000 acres of Additional Reserve Lands within Western Riverside County. The MSHCP Conservation Area provides for the conservation of the Covered Species.
MSHCP Plan Area	The boundaries of the MSHCP, consisting of an approximate 1, 966 square-mile area in Western Riverside County, as depicted in Figure 1-2 of the MSHCP Plan, Volume I, and Exhibit B of the IA.
Multiple Species Habitat	Western Riverside County Multiple Species Habitat Conservation
Conservation Plan (MSHCP)	Plan, a comprehensive habitat conservation planning program that addresses multiple species' needs, including Habitat, and the preservation of native vegetation in Western Riverside County, as depicted in Figure 3-1 of the MSHCP Plan, Volume I, and Exhibit A of the IA.
NCCP Act	California Natural Community Conservation Planning Act (California Fish and Game Code, Section 2800 et seq.) including all regulation promulgated thereunder, as amended.
NCCP Permit	The Permit issued in accordance with the IA by CDFG under the NCCP Act to permit the Take of

	identified species, including rare species, species listed under CESA as threatened or endangered, a species that is a candidate for listing, and unlisted species.
National Environmental Policy Act	NEPA (42 U.S.C., Section 4321-4335) and all rules, regulations promulgated thereunder, as amended. For the purposes of the MSHCP, USFWS is the lead agency under NEPA as defined in 40 Code of Federal Regulations section 1508.16.
Narrow Endemic Plant Species	Plant species that are highly restricted by their Habitat affinities, edaphic requirements or other ecological factors, and for which specific conservation measures have been identified in Section 6.1.3 of the MSHCP, Volume I.
New Agricultural Lands	The acreage converted to Agricultural Operations after the Effective Date of the IA, as described in Section 11.3 of the IA and Section 6.2 of the MSHCP, Volume I.
New Agricultural Lands Cap	A designated maximum number of acres of New Agricultural Land within the Criteria Area, as described in Section 11.3 of the IA and Section 6.2 of the MSHCP, Volume I.
No Surprises Assurance	Provided Permittees are implementing the terms and conditions of MSHCP, the IA, and the Permit (s), the USFWS can only require additional mitigation for Covered Species Adequately Conserved beyond that provided for in the MSHCP as a result of Unforeseen Circumstances in accordance with the "No Surprises" regulations at 50 Code of Federal Regulations sections 17.22(b)(5) and 17.32(b)(5) and as discussed in Section 6.8 of the MSHCP, Volume I.
Non-contiguous Habitat Block	A block of Habitat not connected to other Habitat areas via a Linkage or Constrained Linkage.
Other Species	Species that are not identified as Covered Species under the MSHCP.
Participating Special Entity	Any regional public facility provider, such as a utility company or a public district or agency, that operates and/or owns land within the MSHCP Plan Area and that applies for Take Authorization pursuant to Section 11.8 of the IA.
Party and Parties	The signatories to the IA, namely the Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC, the Cities, Caltrans, State Parks, USFWS and CDFG and any other city within the Plan Area that incorporates after the Effective Date and complies with Section 11.6 of the IA.
Permit(s)	Collectively, the Section 10(a) Permit and NCCP Permit issued by the Wildlife Agencies to Permittees for Take of Covered Species Adequately Conserved pursuant to FESA, CESA and the NCCP Act and in conformance with the MSHCP and the IA.
Permittees	The Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC, the Cities, Caltrans and State Parks.
Plan Area	See "MSHCP Plan Area."
Plan Participants	The Regional Conservation Authority, the County, County Flood Control, County Parks, County Waste, RCTC, the Cities, Caltrans and State Parks and others receiving Take Authorization under the Permits.
Planning Agreement	The document prepared pursuant to the NCCP Act to guide development of the MSHCP, that is contained in Appendix A of the MSHCP, Volume I.
Planning Species	Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans.

Public/Quasi-Public Lands	Subset of MSHCP Conservation Area lands totaling approximately 347, 000 acres of lands known to be in public/private ownership and expected to be managed for open space value and/or in a manner that contributes to the Conservation of Covered Species (including lands contained in existing reserves), as generally depicted in Figure 3-1 of the MSHCP, Volume I.
Riverside County Transportation Commission	RCTC, created pursuant to California Public Utilities Code section 130050.
Regional Conservation Authority	The Western Riverside County Regional Conservation Authority, a joint regional authority formed by the County and the Cities to provide primary policy direction for implementation of the MSHCP, as set forth in Section 6.6 of the MSHCP, Volume I, and Section 11.2 of the IA.
Reserve Assembly	Acquisition and Conservation of Additional Reserve Lands.
Reserve Management Oversight	The committee established by the Executive Director to provide Committee biological, technical and operational expertise for implementation of the MSHCP, including oversight of the MSHCP Conservation Area as described in Section 11.2 of the IA and Section 6.6 of the MSHCP, Volume I.
Reserve Management Plan(s)	The plan(s) setting forth management practices for identified portions of the MSHCP Conservation Area prepared and adopted as described in Section 5 of the MSHCP, Volume I.
Reserve Managers	The entities managing identified portions of the MSHCP Conservation Area for the benefit of the Covered Species as described in Section 6.6.5 of the MSHCP, Volume I.
Rough Step	A Reserve Assembly accounting process to monitor Conservation and loss of specified Habitats within the Criteria Area.
Rough Step Analysis Unit	A geographic unit within which Rough Step is tracked. Rough Step Analysis Units are depicted in Figure 6-6 of the MSHCP, Volume I.
Rural Mountainous	A County of Riverside General Plan land use designation currently permitting single-family residential uses with a minimum lot size of 10 acres with limited animal keeping and agricultural uses allowed; characterizes areas of at least 10 acres where a minimum of 70% of the area has slopes of 25% or greater
Section 10(a) Permit	The permit issued by the USFWS to Permittees, in conformance with the IA and pursuant to 16 U.S.C. section 1539(a), authorizing Take of Covered Species Adequately Conserved.
State Assurances	Except for provisions in Section 15.5 of the IA, provided Permittees are implementing the terms and conditions of the MSHCP, the IA, and the Permits, if there are Unforeseen Circumstances, CDFG shall not require additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources for the life of the NCCP Permit without the consent of the Permittees, unless CDFG determines that continued implementation of the IA, the MSHCP, and/or the Permits would jeopardize the continued existence of a Covered Species, or as required by law and would therefore lead to NCCP Permit revocation or suspension.
State Parks	California Department of Parks and Recreation, a department of the California Resources Agency.
State Permittees	Caltrans and State Department of Parks and Recreation.
Take	The definition of such term in FESA with regard to species listed under FESA, and the definition of such term in the California Fish and Game Code with regard to species listed under CESA.
Take Authorization	The ability to Take species pursuant to the Section 10(a) Permit and/or the NCCP Permit.

Third Party Granted Authorization	Take Any Third Party that receives Third Party Take Authorization in compliance with Section 17 of the IA.
Third Party Take Authorization	Take Authorization received by a landowner, developer, farming interest or other public or private entity from the Permittees pursuant to Section 17 of the IA, thereby receiving Take Authorization for Covered Species Adequately Conserved pursuant to the Permits and in conformance with the MSHCP and IA.
Threatened Species	Those species listed as threatened under FESA and CESA.
Unforeseen Circumstances	Changes in circumstances affecting a Covered Species Adequately Conserved or geographic area covered by the MSHCP that could not reasonably have been anticipated by the Parties at the time of the MSHCP's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species Adequately Conserved. The term "Unforseen Circumstances" as defined in the IA is intended to have the same meaning as it is used: 1) to define the limit of the Permittees' obligation on the "No Surprises" regulations set forth in 50 Code of Federal Regulations, sections 17.22 (b)(5) and 17.32 (b)(5); and 2) in California Fish and Game Code section 2805(k).
Unlisted Species	A species that is not listed as rare, endangered or threatened under FESA, CESA or other applicable state or federal law.
United States Fish and Wildlife Service	USFWS, an agency of the United States Department of the Interior.
Urban/Wildlands Interface	The area where structures and other human development occurs in proximity to the MSHCP Conservation Area.
Vegetation Community(ies)	A group of plants that tend to occur together in consistent, definable groups based on typical constituents as depicted on the MSHCP Vegetation Map, Figure 2-1 of the MSHCP, Volume I.
Wildlife Agencies	The USFWS and CDFG, collectively.

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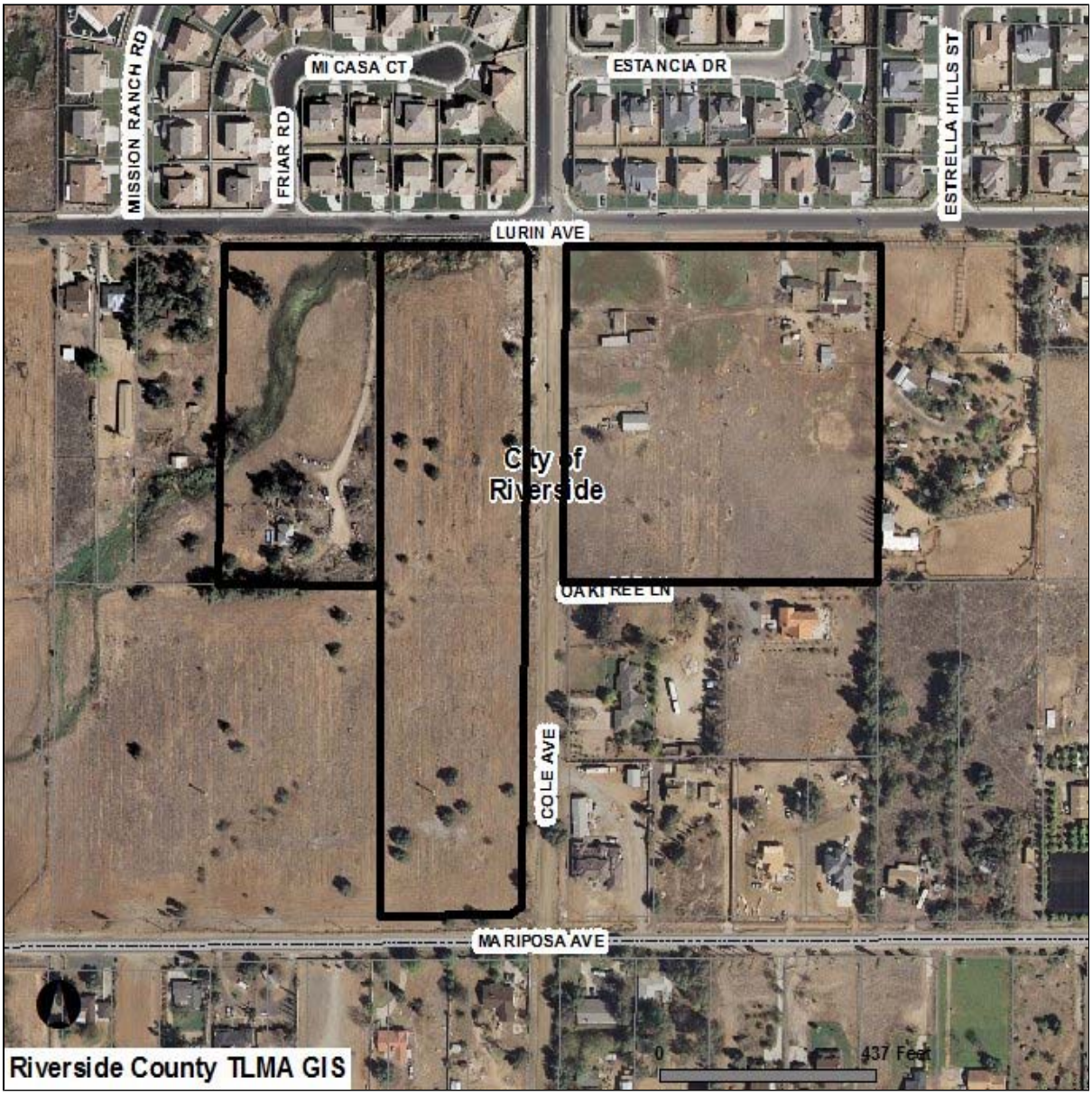
TLMA Home Page

Cole Avenue Storm Drain Improvement Project



Selected parcel(s):
266-140-006 266-140-030 266-160-001

IMPORTANT
Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

STANDARD WITH PERMITS REPORT

APNs
266-140-006-1
266-140-030-2
266-160-001-8

OWNER NAME
NOT AVAILABLE ONLINE

ADDRESS
--
ADDRESS NOT AVAILABLE

MAILING ADDRESS
266-140-006
C/O CYNTHIA HINDS
1928 CHARITON ST NO 5
LOS ANGELES CA. 90034

266-140-030
C/O DIVERSIFIED PACIFIC OPPORTUNITY FUND I
10621 CIVIC CENTER DR
RANCHO CUCAMONGA CA. 91730

266-160-001
(SEE OWNER)
(SEE SITUS)

LEGAL DESCRIPTION

APN: 266140006
RECORDED BOOK/PAGE: MB 11/62
SUBDIVISION NAME: WOODCREST AC
LOT/PARCEL: 21, BLOCK: NOT AVAILABLE
, Por.TRACT NUMBER: NOT AVAILABLE

APN: 266140030
RECORDED BOOK/PAGE: PM 38/76
SUBDIVISION NAME: PM 8704
LOT/PARCEL: 2, BLOCK: NOT AVAILABLE
TRACT NUMBER: NOT AVAILABLE

APN: 266160001
RECORDED BOOK/PAGE: MB 11/62
SUBDIVISION NAME: WOODCREST AC
LOT/PARCEL: 20, BLOCK: NOT AVAILABLE
TRACT NUMBER: NOT AVAILABLE

LOT SIZE

266-140-006
RECORDED LOT SIZE IS 4.81 ACRES

266-140-030
RECORDED LOT SIZE IS 8.22 ACRES

266-160-001
RECORDED LOT SIZE IS 9.17 ACRES

PROPERTY CHARACTERISTICS

266-140-006
CONCRETE BLOCK THROUGHOUT, 1172 SQFT., 2 BDRM/ 1 BATH, 1 STORY, DETACHED GARAGE(440 SQ. FT), CONST'D 1941COMPOSITION, ROOF

266-140-006
WOOD FRAME, 511 SQFT., 2 BDRM/ 0.75 BATH, 1 STORY, CONST'D 1935COMPOSITION, ROOF

266-140-030
NO PROPERTY DESCRIPTION AVAILABLE

266-160-001
WOOD FRAME, 1623 SQFT., 3 BDRM/ 2 BATH, 1 STORY, ATTACHED GARAGE(456 SQ. FT), CONST'D 1966SHAKE, ROOF, CENTRAL HEATING

266-160-001
WOOD FRAME, 367 SQFT., 2 BDRM/ 1 BATH, 1 STORY, CONST'D 1985SHAKE, ROOF, CENTRAL HEATING, CENTRAL COOLING

THOMAS BROS. MAPS PAGE/GRID

PAGE: 746 GRID: E4, E5

CITY BOUNDARY/SPHERE

CITY OF 1.0
CITY SPHERE: 1.0
ANNEXATION DATE: JAN. 1, 1970
LAFCO CASE #: 1.0
PROPOSALS: 1.0 FROM THE CITY OF 1.0

MARCH JOINT POWERS AUTHORITY

NOT IN THE JURISDICTION OF THE MARCH JOINT POWERS AUTHORITY

INDIAN TRIBAL LAND

NOT IN A TRIBAL LAND

SUPERVISORIAL DISTRICT (ORD. 813)

BOB BUSTER, DISTRICT 1

TOWNSHIP/RANGE

T3SR4W SEC 29

ELEVATION RANGE

1680/1708 FEET

PREVIOUS APN

266-140-006
114-000-150

266-140-030
266-140-028

266-160-001
114-000-147

PLANNING

LAND USE DESIGNATIONS
Consult with the city for land use information.

AREA PLAN (RCIP)
LAKE MATHEWS / WOODCREST

GENERAL PLAN POLICY OVERLAYS
NOT IN A GENERAL PLAN POLICY OVERLAY AREA

GENERAL PLAN POLICY AREAS
NONE

ZONING CLASSIFICATIONS (ORD. 348)
See the city for more information

ZONING DISTRICTS AND ZONING AREAS
WOODCREST DISTRICT

ZONING OVERLAYS
NOT IN A ZONING OVERLAY

SPECIFIC PLANS
NOT WITHIN A SPECIFIC PLAN

AGRICULTURAL PRESERVE
WOODCREST #7

REDEVELOPMENT AREAS
NOT IN A REDEVELOPMENT AREA

AIRPORT INFLUENCE AREAS
MARCH AIR RESERVE BASE

AIRPORT COMPATIBLITY ZONES
NOT IN AN AIRPORT COMPATIBILTY ZONE

ENVIRONMENTAL

CVMSHCP (COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN) CONSERVATION AREA
NOT IN A CONSERVATION AREA

CVMSHCP FLUVIAL SAND TRANSPORT SPECIAL PROVISION AREAS
NOT IN A FLUVIAL SAND TRANSPORT SPECIAL PROVISION AREA

WRMSHCP (WESTERN RIVERSIDE COUNTY MULTI-SPECIES HABITAT CONSERVATION PLAN) CELL GROUP
NOT IN A CELL GROUP

WRMSHCP CELL NUMBER
NOT IN A CELL

HANS/ERP (HABITAT ACQUISITION AND NEGOTIATION STRATEGY/EXPEDITED REVIEW PROCESS)
NONE

VEGETATION (2005)
AGRICULTURAL LAND
DEVELOPED/DISTURBED LAND

FIRE

HIGH FIRE AREA (ORD. 787)
NOT IN A HIGH FIRE AREA

FIRE RESPONSIBLITY AREA
NOT IN A FIRE RESPONSIBILITY AREA

DEVELOPMENT FEES

CVMSHCP FEE AREA (ORD. 875)
NOT WITHIN THE COACHELLA VALLEY MSHCP FEE AREA

WRMSHCP FEE AREA (ORD. 810)
IN OR PARTIALLY WITHIN THE WESTERN RIVERSIDE MSHCP FEE AREA. SEE MAP FOR MORE INFORMATION.

ROAD & BRIDGE DISTRICT
NOT IN A DISTRICT

EASTERN TUMF (TRANSPORTATION UNIFORM MITIGATION FEE ORD. 673)
NOT WITHIN THE EASTERN TUMF FEE AREA

WESTERN TUMF (TRANSPORTATION UNIFORM MITIGATION FEE ORD. 824)
IN OR PARTIALLY WITHIN A TUMF FEE AREA. SEE MAP FOR MORE INFORMATION.NORTHWEST

DIF (DEVELOPMENT IMPACT FEE AREA ORD. 659)
LAKE MATHEWS

SKR FEE AREA (STEPHEN'S KANGAROO RAT ORD. 663.10)
IN OR PARTIALLY WITHIN AN SKR FEE AREA. SEE MAP FOR MORE INFORMATION.

DEVELOPMENT AGREEMENTS
NOT IN A DEVELOPMENT AGREEMENT AREA

TRANSPORTATION

CIRCULATION ELEMENT ULTIMATE RIGHT-OF-WAY
IN OR PARTIALLY WITHIN A CIRCULATION ELEMENT RIGHT-OF-WAY. SEE MAP FOR MORE INFORMATION. CONTACT THE TRANSPORTATION DEPT. PERMITS SECTION AT (951) 955-6790 FOR INFORMATION REGARDING THIS PARCEL IF IT IS IN AN UNINCORPORATED AREA.

ROAD BOOK PAGE
54

TRANSPORTATION AGREEMENTS
NOT IN A TRANSPORTATION AGREEMENT

CETAP (COMMUNITY AND ENVIRONMENTAL TRANSPORTATION ACCEPTABILITY PROCESS) CORRIDORS
NOT IN A CETAP CORRIDOR.

HYDROLOGY

FLOOD PLAIN REVIEW
NOT REQUIRED.

WATER DISTRICT
WMWD

FLOOD CONTROL DISTRICT
RIVERSIDE COUNTY FLOOD CONTROL DISTRICT

WATERSHED
SANTA ANA RIVER

GEOLOGIC

FAULT ZONE
NOT IN A FAULT ZONE

FAULTS
NOT WITHIN A 1/2 MILE OF A FAULT

LIQUEFACTION POTENTIAL
NO POTENTIAL FOR LIQUEFACTION EXISTS

SUBSIDENCE
NOT IN A SUBSIDENCE AREA

PALEONTOLOGICAL SENSITIVITY
LOW POTENTIAL.
FOLLOWING A LITERATURE SEARCH, RECORDS CHECK AND A FIELD SURVEY, AREAS MAY BE DETERMINED BY A QUALIFIED VERTEBRATE PALEONTOLOGIST AS HAVING LOW POTENTIAL FOR CONTAINING SIGNIFICANT PALEONTOLOGICAL RESOURCES SUBJECT TO ADVERSE IMPACTS.

MISCELLANEOUS

SCHOOL DISTRICT
RIVERSIDE UNIFIED

COMMUNITIES
GLEN VALLEY

COUNTY SERVICE AREA
NOT IN A COUNTY SERVICE AREA.

LIGHTING (ORD. 655)
ZONE B, 44.25 MILES FROM MT. PALOMAR OBSERVATORY

2000 CENSUS TRACT
042009

FARMLAND
LOCAL IMPORTANCE
OTHER LANDS

TAX RATE AREAS
009206
•CITY OF RIVERSIDE
•CSA 152
•FLOOD CONTROL ADMINISTRATION
•FLOOD CONTROL ZONE 2
•GENERAL
•GENERAL PURPOSE
•METRO WATER WEST
•N.W. MOSQUITO & VECTOR CONT DIST
•RIV CO REG PARK & OPEN SPACE
•RIV. CO. OFFICE OF EDUCATION
•RIVERSIDE CITY COMMUNITY COLLEGE
•RIVERSIDE CORONA RESOURCE CONSER
•RIVERSIDE UNIFIED SCHOOL
•WESTERN MUN WATER IMP DIST 1
•WESTERN MUN WATER IMP DIST U-2
•WESTERN MUNICIPAL WATER

SPECIAL NOTES
NO SPECIAL NOTES

BUILDING PERMITS

Case #	Description	Status
078786	DWLG & ATT CARPORT (GUEST DWLG)	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
172546	100 AMP SERVICE	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
BZ136444	DEMOLISH DWELLING	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
BZ136774	TOILET BUILDING (ATTACHED TO REG)	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
BZ136775	REGISTRATION EGG STORAGE	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
BZ143415	LOT 20 DWLG & ATT GAR	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
BZ244307	WIND MACHINE	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017
BZ388663	ADD LEACH LINE	CONTACT THE BUILDING AND SAFETY RECORDS DEPARTMENT AT 951-955-2017

ENVIRONMENTAL HEALTH PERMITS

Case #	Description	Status
NO ENVIRONMENTAL PERMITS	NOT APPLICABLE	NOT APPLICABLE

PLANNING PERMITS

Case #	Description	Status
CZ06131	CHANGE OF ZONE FROM R-A, A-1-10, A-1-5, A-1-2 1/2	APPROVED
EA36264	ENVIRONMENTAL ASSESSMENT FOR SPECIFIC PLAN 299 -AL	DENIED
EIR00389	ENVIRONMENTAL IMPACT REPORT FOR SP 299-ALTA CRESTA	APPROVED
GPA00361	AMEND OPEN SPACE FROM AGRICULTURE TO SP	DUPLICAT
SP00299	ALTA CRESTA RANCH SPECIFIC PLAN	APPROVED

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Landscape
Riverside East, Steele Peak

	Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1	Accipiter cooperii	Cooper's hawk	ABNKC12040			G5	S3		
2	Agelaius tricolor	tricolored blackbird	ABPBXB0020			G2G3	S2		SC
3	Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091			G5T2T4	S2S3		
4	Allium munzii	Munz's onion	PMLIL022Z0	Endangered	Threatened	G1	S1	1B.1	
5	Ambrosia pumila	San Diego ambrosia	PDAST0C0M0	Endangered		G1	S1.1	1B.1	
6	Amphispiza belli belli	Bell's sage sparrow	ABPBX97021			G5T2T4	S2?		
7	Arenaria paludicola	marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1	
8	Asio otus	long-eared owl	ABNSB13010			G5	S3		SC
9	Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060			G5	S2		SC
10	Aspidoscelis tigris stejnegeri	coastal whiptail	ARACJ02143			G5T3T4	S2S3		
11	Athene cunicularia	burrowing owl	ABNSB10010			G4	S2		SC
12	Berberis nevinii	Nevin's barberry	PDBER060A0	Endangered	Endangered	G2	S2.2	1B.1	
13	Calochortus plummerae	Plummer's mariposa-lily	PMLIL0D150			G3	S3	1B.2	
14	Caulanthus simulans	Payson's jewel-flower	PDBRA0M0H0			G3	S3.2	4.2	
15	Centromadia pungens ssp. laevis	smooth tarplant	PDAST4R0R4			G3G4T2	S2.1	1B.1	
16	Ceratochrysis longimala	A cuckoo wasp	IIHYM71040			G1	S1		
17	Chaetodipus fallax fallax	northwestern San Diego pocket mouse	AMAFD05031			G5T3	S2S3		SC
18	Charina trivirgata	rosy boa	ARADA01020			G4G5	S3S4		
19	Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2	
20	Chorizanthe parryi var. parryi	Parry's spineflower	PDPGN040J2			G3T2	S2	1B.1	
21	Chorizanthe polygonoides var.	long-spined spineflower	PDPGN040K1			G5T3	S3	1B.2	
22	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1		
23	Crotalus ruber	red-diamond rattlesnake	ARADE02090			G4	S2?		SC
24	Diadophis punctatus modestus	San Bernardino ringneck snake	ARADB10015			G5T2T3	S2?		
25	Dipodomys merriami parvus	San Bernardino kangaroo rat	AMAFD03143	Endangered		G5T1	S1		SC
26	Dipodomys stephensi	Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2		
27	Dodecahema leptoceras	slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1	
28	Elanus leucurus	white-tailed kite	ABNKC06010			G5	S3		
29	Eremophila alpestris actia	California horned lark	ABPAT02011			G5T3Q	S3		
30	Euphydryas editha quino	quino checkerspot butterfly	IILEPK405L	Endangered		G5T1	S1		
31	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	G5	S2		
32	Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010			G4	S3.2	4.2	
33	Icteria virens	yellow-breasted chat	ABPBX24010			G5	S3		SC

	Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
34	Lanius ludovicianus	loggerhead shrike	ABPBR01030			G4	S4		SC
35	Lasiurus xanthinus	western yellow bat	AMACC05070			G5	S3		SC
36	Lepidium virginicum var. robinsonii	Robinson's pepper-grass	PDBRA1M114			G5T2?	S2.2	1B.2	
37	Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051			G5T3?	S3?		SC
38	Myosurus minimus ssp. apus	little mousetail	PDRAN0H031			G5T2Q	S2.2	3.1	
39	Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041			G5T3?	S3?		SC
40	Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010			G4	S2S3		SC
41	Onychomys torridus ramona	southern grasshopper mouse	AMAFF06022			G5T3?	S3?		SC
42	Perognathus longimembris brevinasus	Los Angeles pocket mouse	AMAFD01041			G5T1T2	S1S2		SC
43	Phrynosoma blainvillii	coast horned lizard	ARACF12100			G4G5	S3S4		SC
44	Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2		SC
45	Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	CTT61310CA			G4	S4		
46	Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	CTT61330CA			G3	S3.2		
47	Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	CTT62400CA			G4	S4		
48	Spea hammondii	western spadefoot	AAABF02020			G3	S3		SC
49	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100			G3G4	S3		
50	Taxidea taxus	American badger	AMAJF04010			G5	S4		SC
51	Texosporium sancti-jacobi	woven-spored lichen	NLTEST7980			G3	S1.1		
52	Vireo bellii pusillus	least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2		

THE DBESP IS INCLUDED AS INITIAL STUDY APPENDIX B.2

THE JURISDICTIONAL DELINEATION REPORT IS INCLUDED

AS INITIAL STUDY APPENDIX B.3

APPENDIX B.2

Determination of Biological Equivalent or Superior Preservation

COLE AVENUE STORM DRAIN IMPROVEMENT PROJECT

FINAL

DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

City of Riverside, Riverside County, California

Assessor's Parcel Numbers: 266-140-006, 266-140-030, 266-160-001

Submitted to:

Albert A. Webb Associates
3788 McCray Street
Riverside, California 92506

Contact: Eliza Laws
(951) 320-6055

Submitted by:

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(951) 369-8060

January 2012

AMEC Project No. 1155400454

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Appendices

1.0 INTRODUCTION

A Determination of Biologically Equivalent or Superior Preservation (DBESP) Report is required for impacts to Riparian/Riverine areas/Vernal Pools as required by the Western Riverside Multiple Species Habitat Conservation Plan (WRMSHCP), as defined by the WRMSHCP (see Section 6.1.2, pages 6-21 and 6-22). A DBESP shall be made to ensure replacement of any lost functions and values of habitat as it relates to covered species. Projects that prepare a DBESP are still subject to all State and Federal regulations related to wetland habitats, streambeds, and "waters."

2.0 DEFINITION OF PROJECT AREA

The project is located near the intersection of Lurin Avenue and Cole Avenue in the City of Riverside, Riverside County, CA (Appendix A, Figure 1). AMEC understands that the proposed project will construct storm drain improvements between Lurin Avenue and Krameria Avenue on Cole Avenue as well as on some adjacent roadways located easterly of Cole Avenue. These improvements will convey runoff from the surrounding residential developments and discharge to a proposed outlet structure to be located on the southerly side of Lurin Avenue approximately 400 feet westerly of Cole Avenue (see Appendix A for Site Plans). The only portion of the project having the potential to impact biological resources is located on the southerly side of Lurin Avenue.

The portion of the project potentially impacting biological resources is located within the Assessor Parcel Numbers (APN) 266-140-006, 266-140-030, and 266-160-001. A drainage is present on the south side of Lurin Avenue – east of Cole Avenue, the drainage is cement; west of Cole Avenue, the drainage is dirt; west of the unnamed driveway (near the proposed outlet structure), the drainage is cement. South of Lurin Avenue and the drainage, between Cole Avenue and the unnamed driveway, riparian vegetation dominated by willows (*Salix* sp.) is present; west of the unnamed driveway, cattails (*Typha* sp.) dominate. The areas south of the riparian vegetation are disturbed lots dominated by non-native grasses and vegetation. No oak trees are present on the property. Topography of the site is relatively flat. The elevation ranges from approximately 1,683-1,694 feet above mean sea level (MSL). Soils are comprised of Monserate sandy loam, 0 to 5 percent slopes and Fallbrook fine sandy loam, 2 to 8 percent slopes (USDA 2011). Monserate sandy loam consists of well-drained soils that developed in alluvium from predominately granitic materials. This soil type occurs on terraces and old alluvial fans. Fallbrook fine sandy loam consists of well-drained soils that lie on uplands. This soil developed on granodiorite and tonalite. See Appendix A for site photographs.

3.0 AVOIDANCE/MINIMIZATION

Section 6.1.2 of the MSHCP states that the project proponent shall ensure that, through the California Environmental Quality Act (CEQA) process, project applicants develop project alternatives demonstrating efforts that first avoid, and then minimize direct and indirect effects to wetlands. An avoidance alternative shall be selected, if feasible. If an avoidance alternative is not feasible, a practicable alternative that minimizes direct and indirect effects to

riparian/riverine areas and vernal pools and associated functions and values to the greatest extent possible shall be selected. Those impacts that are unavoidable shall be mitigated such that the lost functions and values as they relate to covered species are replaced as set forth under the DBESP.

A 100-percent avoidance alternative for this project is not possible because this is a localized drainage problem. However, various minimization/mitigation measures and project design features have been incorporated and/or will be implemented to reduce impacts to the greatest extent possible:

- The project will be constructed primarily in existing city streets, which will have minimal impacts to undisturbed areas.
- Best Management Practices (BMP) will be implemented to minimize impacts caused by dust, run-off, trash, etc.
- Direct impacts to the Southern Willow Scrub habitat will be avoided.
- Construction adjacent to Lurin Avenue will be conducted outside of the nesting bird season.
- The outlet structure has been modified to avoid sensitive habitat.
- A flow-dissipating channel downstream of the outlet structure will be installed to reduce erosion.

4.0 BIOLOGICAL RESOURCES

4.1 Project Relationship to the Western Riverside County MSHCP

The Project is located within the Lake Mathews/Woodcrest Area Plan of the MSHCP. However, the Project is not located within a Subunit or Criteria Cell of the Area Plan. The project is not within any existing or proposed cores, linkages, constrained linkages, or non-contiguous habitat blocks within the MSHCP. The project is not expected to interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites.

4.2 Biological/Hydrological Resources Assessments

As part of the CEQA review for the proposed project, an assessment of biological resources was performed; it is attached as Appendix A. A preliminary determination of jurisdictional waters and wetlands was also performed; it is attached as Appendix B. A brief summary of the findings contained in these reports is presented below.

No special-status or covered species were observed during the biological assessment; however, the riparian habitat dominated by willows (Southern Willow Scrub) is suitable for Least Bell's Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*), both federal- and State-Endangered species. The Southern Willow Scrub habitat is located south of Lurin Avenue and west of Cole Avenue. There are no suitable burrows or

burrowing animals present (*e.g.*, California Ground Squirrels [*Spermophilus beecheyi*]), so there is no suitable habitat for Burrowing Owls present. Adjacent properties include developed and disturbed lots unsuitable for Burrowing Owls and other special-status species.

The project contains one jurisdictional drainage with three distinct segments. The drainage contains Waters of the U.S., Waters of the State of California, California Department of Fish and Game streambed and associated riparian habitat, and riparian/riverine areas. However, through a modified project design, there will be no direct impacts to jurisdictional areas resulting from construction of the proposed project.

5.0 QUANTIFICATION OF UNAVOIDABLE IMPACTS

This section quantifies unavoidable impacts to riparian/riverine areas and vernal pools associated with the project, including direct and indirect impacts. There will be no direct impacts to sensitive habitats or jurisdictional areas resulting from construction of the proposed project. All habitat on-site will remain intact. Indirect impacts will be minimized through mitigation measures (*e.g.*, BMP implementation, construction outside of breeding bird season, etc.).

6.0 FINDINGS

The proposed design will allow the project to be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures.

6.1 Effects on Conserved Habitats

The riverine/riparian areas currently on the site are not part of any planned MSHCP conservation effort, and are not adjacent to proposed conservation lands. Minimal impacts to these areas will have no effect on conserved habitats.

6.2 Effects on the Riparian/Riverine and Vernal Pool Planning Species

The on-site riverine/riparian area is small and isolated. However, it is possible that Least Bell's Vireo (typically present March through August) and Southwestern Willow Flycatcher (typically present April through August) could utilize this habitat within the general breeding bird nesting season (typically February through August). Direct impacts to the Southern Willow Scrub habitat will not occur; this habitat will be avoided. Indirect impacts, such as dust, noise, lighting, run-off, etc. will be minimized by BMP implementation. Also, construction will be conducted outside of the breeding bird nesting season.

6.3 Effects on Riparian Linkages and Function of the Conservation Area

The site is not in or adjacent to MSHCP linkages or conservation areas, so the project will have no effect on linkages or functions of conservation areas.

7.0 REFERENCES

United States Department of Agriculture (USDA). 2011. Natural Resources Conservation Service. Web Soil Survey. Online at: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

Western Riverside County Multiple Species Habitat Conservation Plan. Volume 1, The Plan. Online at: http://www.rctlma.org/mshcp/volume1/index.html

THE HABITAT SUITABILITY ASSESSMENT IS INCLUDED

AS INITIAL STUDY APPENDIX B.1

THE JURISDICTIONAL DELINEATION REPORT IS INCLUDED

AS INITIAL STUDY APPENDIX B.3

APPENDIX B.3

Jurisdictional Delineation Report

COLE AVENUE STORM DRAIN IMPROVEMENT PROJECT

JURISDICTIONAL DELINEATION REPORT

Prepared for:
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Prepared by:
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Principle Investigator:
Scot Chandler

October 2011

AMEC Project No. 1155400454

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ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Earth & Environmental, Inc.
CDFG	California Department of Fish and Game
CMP	Corrugated metal pipe
CWA	Clean Water Act
DBESP	Determination of Biologically Equivalent or Superior Preservation
EPA	Environmental Protection Agency
GIS	geographic information system
GPS	global positioning system
MSHCP	Multiple Species Habitat Conservation Plan
MSL	mean sea level
OHWM	ordinary high water mark
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
ROW	Right-of-way
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. Corps
TNW	traditionally navigable waterway
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USGS	U.S. Geological Survey
WUS	Waters of the United States
WSC	Waters of the State of California

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1.0 INTRODUCTION

The City of Riverside's Public Works Department is proposing improvements to the storm drain system which extends from the intersection of Krameria Avenue southwest to just west of the intersection of Cole Avenue and Lurin Avenue (proposed project). Albert A. Webb Associates retained AMEC Earth & Environmental, Inc. (AMEC) to determine the potential for impacts to jurisdictional waters.

This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the Cole Avenue Storm Drain Improvement Project. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project site to support the resource agencies permitting process.

This jurisdictional delineation report describes the resources subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Act, California Department of Fish and Game (CDFG) under Section 1602 of the California Fish and Game Code, and the City of Riverside under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

1.1 Project Location

The Study Area includes Assessor Parcel Number (APN) 266-140-006 and the public right-of-way north and east of the previously-mentioned parcel to just east of Cole Avenue and south of Lurin Avenue. It encompasses approximately 5.98 acres. The Study Area is located in the City of Riverside, Riverside County, California (Figure 1). Specifically, it is located within Section 29 of Township 3 South, Range 4 West, as shown on the United States Geological Survey (USGS) 7.5 minute Riverside East, California quadrangle (Figure 2).

1.2 Project Description

The proposed project will construct storm drain improvements between Lurin Avenue and Krameria Avenue on Cole Avenue as well as on some adjacent roadways located east of Cole Avenue. These improvements will convey runoff from the surrounding residential developments and discharge to a proposed outlet structure to be located on the south side of Lurin Avenue approximately 400 feet west of Cole Avenue. The entire project alignment is shown on Figure 3. The only portion of the proposed project having the potential to impact jurisdictional waters is located on the south side of Lurin Avenue.

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Regional Location
Cole Avenue Storm Drain Improvement Project

FIGURE
1

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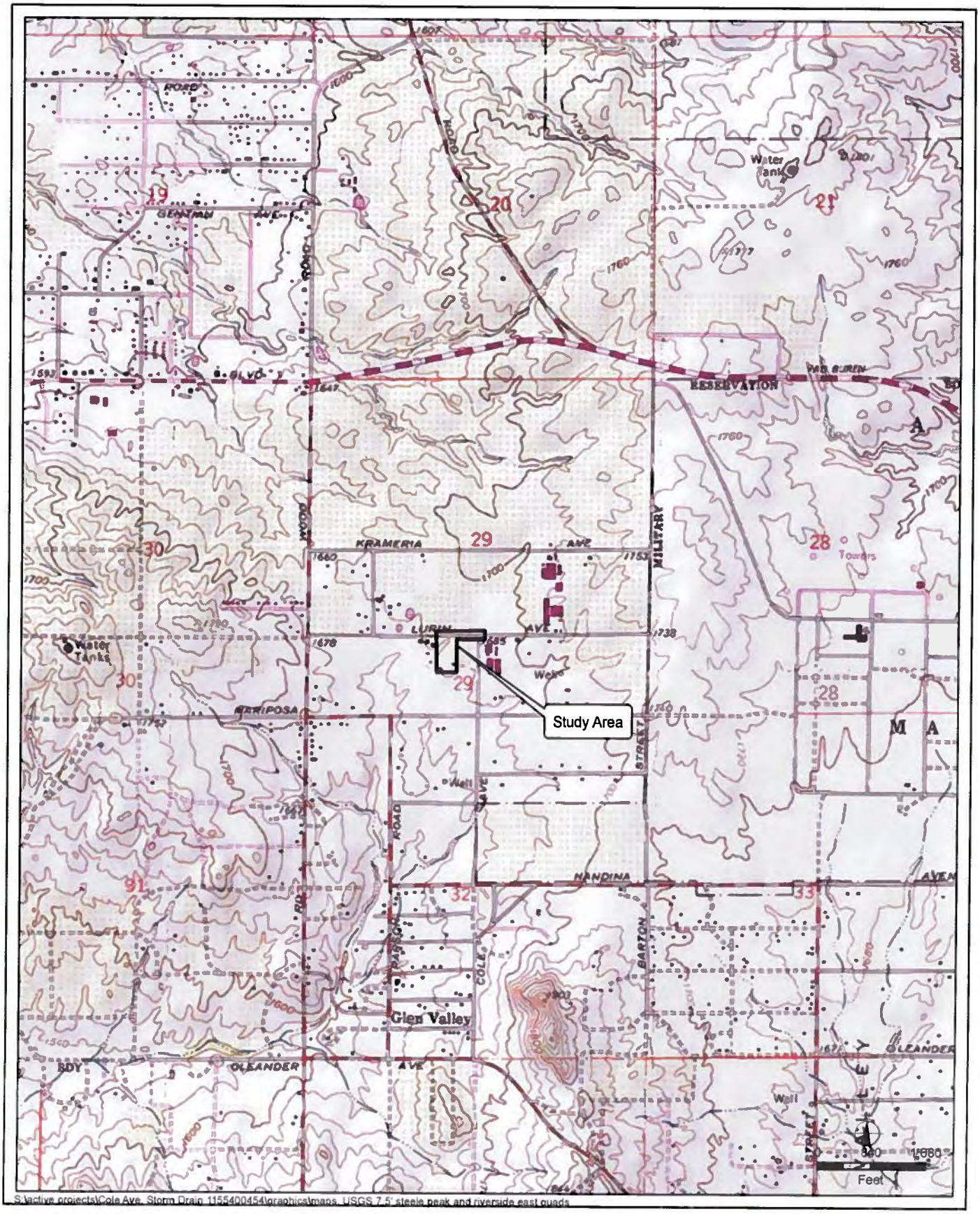

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FIGURE 2

Topo Map
Cole Avenue Storm Drain Improvement Project

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Project Alignment
Cole Avenue Storm Drain Improvement Project

FIGURE
3

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2.0 ENVIRONMENTAL SETTING

2.1 Existing Conditions

The Study Area is dominated by non-native grassland. A drainage feature traverses the northern portion of the Study Area which is dominated by riparian vegetation. Elevations within the Study Area range from approximately 1,689 feet above mean sea level (msl) where the on-site drainage enters the Study Area in the northeast portion to 1,679 feet above msl where the drainage exits the Study Area in the southwest portion.

A single-family residence is located in the southwest portion of the Study Area. The remainder of the site is undeveloped.

Surrounding land uses include a single-family home subdivision to the north and large-lot rural residential housing and undeveloped land to the east, west, and south.

2.2 Soils

The United States Department of Agriculture, Natural Resources Conservation Service (USDA) online Web Soil Survey (based on the 1971 *Soil Survey of Western Riverside Area, California* (USDA 2011a) was consulted to determine the soil associations and soil types mapped as occurring within the Study Area. None of the soil types found within the Study Area are listed on the hydric soils list (USDA 2011b). The Study Area crosses two soil types (Figure 4) which includes:

- Monserate sandy loam, 0 to 5 percent slopes (MmB) – Monserate sandy loam consists of well-drained soils that developed in alluvium from predominately granitic materials. This soil type occurs on terraces and old alluvial fans.
- Fallbrook fine sandy loam, 2 to 8 percent slopes (FfC2) – Fallbrook fine sandy loam consists of well-drained soils that lie on uplands. This soil developed on granodiorite and tonalite.

2.3 Hydrology

The Study Area receives hydrology from storm drains that collect water from a residential housing tract directly adjacent to the north side of the Study Area. Water enters the Study Area in the northeast portion and flows west and then southwest. After exiting the Study Area through the western boundary, runoff from the site generally flows south in an un-named drainage and then flows through Mockingbird Canyon and into Mockingbird Reservoir. It then flows into Riverside Canal, Temescal Wash and into Prado Basin which is part of the Santa Ana River. The Santa Ana River eventually flows into the Pacific Ocean.

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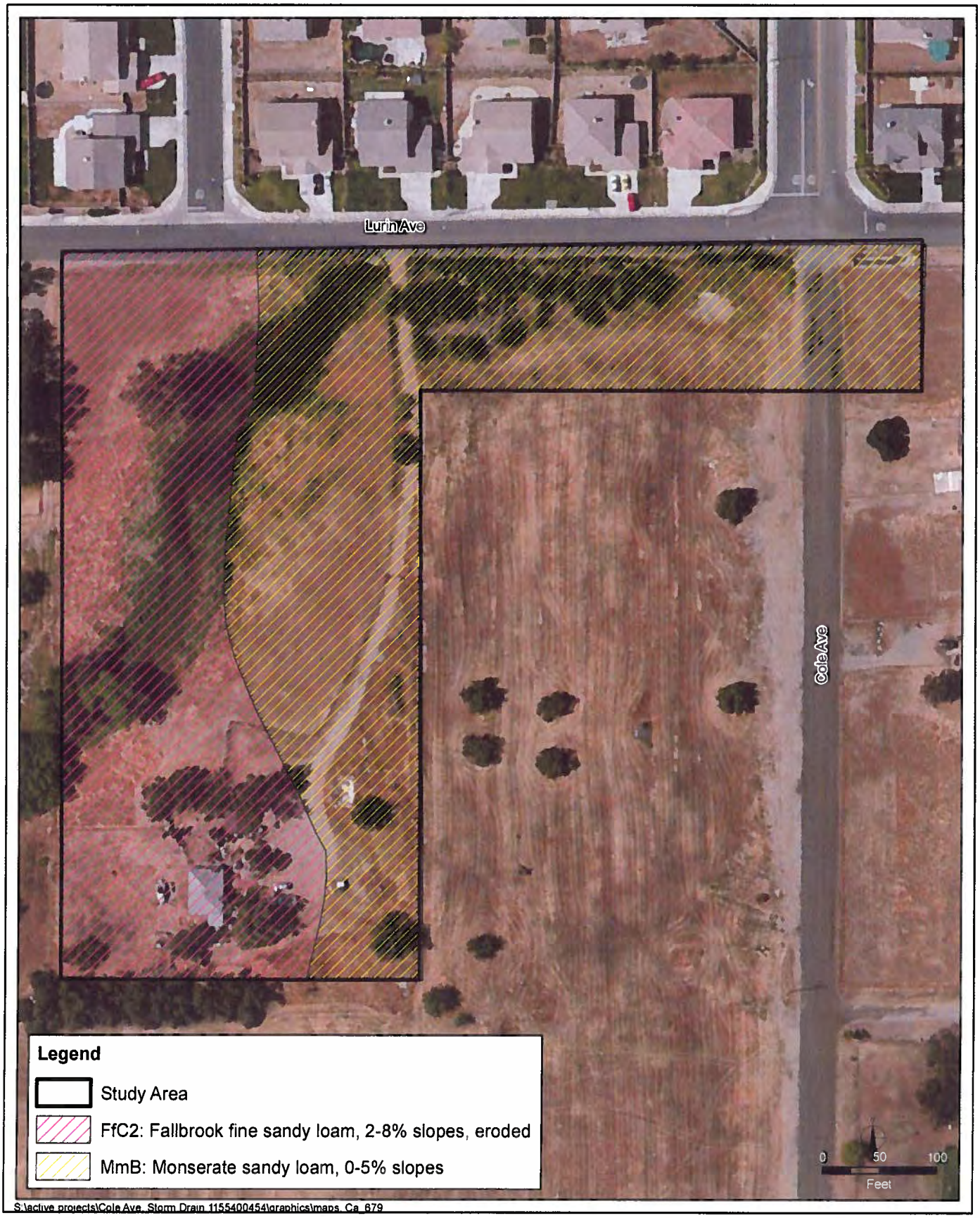

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FIGURE

4

Soils Map
Cole Avenue Storm Drain Improvement Project

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3.0 REGULATORY FRAMEWORK

3.1 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the U.S. (WUS) pursuant to Section 404 of the CWA.

3.1.1 Waters of the U.S.

CWA regulations (33 CFR 328.3(a)), define WUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as WUS under the definition;
5. Tributaries of WUS;
6. The territorial seas;
7. Wetlands adjacent to WUS (other than waters that are themselves wetlands).

The USACE delineates non-wetland waters in the Arid West Region by identifying the Ordinary High Water Mark (OHWM) in ephemeral and intermittent channels (USACE 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

> "...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

3.1.2 Wetlands

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

3.1.3 Supreme Court Decisions

3.1.3.1 Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al. with respect to whether the USACE could assert jurisdiction over isolated waters. The Solid Waste Agency of North Cook County (SWANCC) ruling stated that the USACE does not have jurisdiction over "non-navigable, isolated, intrastate" waters.

3.1.3.2 Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. In light of the Rapanos decision, the USACE will assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

Flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary indicate whether they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. Analysis of potentially jurisdictional streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snow pack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to traditionally navigable waters (TNW), the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

3.2 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401 of the CWA. Section 401 of the CWA addresses the impact of a project on water quality. A project must comply with Section 401 before the USACE can issue a Section 404 Permit. In California, the RWQCB in charge of the project area issues Section 401 Water Quality Certifications or Waivers of Certification, depending upon the extent of impacts to WUS. The RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may include isolated waterbodies.

The RWQCB also regulates impacts to WSC under the Porter-Cologne Water Quality Control Act through issuance of a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending upon the level of impact and the properties of the waterway.

3.3 California Department of Fish and Game

The State of California regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

> "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

CDFG jurisdiction includes ephemeral, intermittent and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated, or to the limit of the adjacent riparian habitat located contiguous to the watercourse if the stream or lake is vegetated.

In practice, the CDFG generally interprets their jurisdictional limits to include the following:

1. At minimum, intermittent and seasonal flow through a bed or channel with banks and that also supports fish or other aquatic life.
2. A watercourse having a surface or subsurface flow regime that supports or that has supported riparian vegetation.
3. Hydrogeomorphically distinct top-of-embankment to top-of-embankment limits.
4. Outer ground cover and canopy extents of typically riparian associated vegetation species that that would be sustained by surface and/or subsurface waters of the watercourse.

3.4 Western Riverside County MSHCP

Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, of the MSHCP defines riparian/riverine areas as "lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year".

Section 6.1.2 of the MSHCP defines vernal pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics and the definition of the watershed supporting vernal pool hydrology must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records".

Areas meeting the definition of riparian/riverine or vernal pools which are artificially created are not included in these definitions, with the exception of wetlands created for the purposes of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses.

Preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report is required under the MSHCP for projects that involve impacts to riparian/riverine resources and/or vernal pools. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to covered species.

4.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

- Aerial photographs of the project site at a scale of 1:4800 with 5-foot elevation contours to determine the potential locations of USACE, RWQCB, and CDFG jurisdictional areas;
- USGS topographic map (Figure 2) to determine the presence of any "blue line" drainages or other mapped water features;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) to identify areas mapped as wetland features; and
- USDA NRCS soil mapping data (Figure 4).

Field surveys of the project site were conducted by AMEC biologist Scot Chandler on August 23 and September 12, 2011. Surveys consisted of walking the entire project site and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with generally clear skies.

Wetland and non-wetland WUS were delineated according to the methods outlined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a), and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b). The extent of WUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Additional data was recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled in order to classify an area as a wetland under the jurisdiction of the USACE: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology. Details of these criteria are described below:

- **Hydrophytic Vegetation.** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE 2008). An OBL indicator status refers to plants that have a 99% probability of occurring in wetlands under natural conditions. A FACW indicator status refers to plants that usually occur in wetlands (67 to 99% probability) but are occasionally found elsewhere. A FAC indicator status refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability 34 to 66% for each). The wetland indicator status used for this report follows the National List of Plant Species that Occur in Wetlands: California (Region 0) (Reed 1988).

- **Hydric Soils**. The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper 12 inches of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the Munsell Soil Color Charts (Munsell 2000).
- **Wetland Hydrology.** The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE 1987).

Areas meeting all three parameters were designated as wetland WUS. Site photographs and wetland delineation data sheets are included as Appendix A and Appendix B, respectively.

Evaluation of CDFG jurisdiction followed guidance in the Fish and Game Code and A Field Guide to Lake and Streambed Alteration Agreements (CDFG 1994). Specifically, CDFG jurisdiction was delineated by measuring the outer width and length boundaries of on-site streambeds which consisted of either the top of bank measurement (bankfull width) or the extent of associated riparian vegetation.

Riparian/riverine areas jurisdictional under the MSHCP were mapped similar to CDFG jurisdiction except where the water feature was artificially created for purposes other than mitigation or enhancement of wildlife habitat.

When a potentially jurisdictional drainage was encountered, the surveyor walked the length of the drainage and recorded the centerline with a Trimble GeoXH GPS unit. The width of each drainage was determined by the OHWM and measured at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and all vegetation within the streambed and riparian vegetation adjacent to the streambed. If the streambed was unvegetated, the vegetation growing on the banks was recorded. Upon completion of fieldwork, all data collected in the field were incorporated into a Geographic Information System (GIS) along with basemap data. The GIS was then used to quantify the extent of jurisdictional areas.

5.0 RESULTS

The Study Area contains one jurisdictional drainage identified as Drainage A with three distinct segments as shown in the Jurisdictional Delineation Map (Figure 5). Table 1 illustrates the jurisdictional area within Drainage A. Drainage A contains WUS, WSC, CDFG streambed and associated riparian habitat, and riparian/riverine areas. Riparian/riverine areas were mapped the same as CDFG jurisdiction. Site photographs are included in Appendix A and the photo locations are shown on Figure 5. Vegetation nomenclature follows The Jepson Manual (Hickman, 1993).

Table 1
Summary of Jurisdictional Areas

Drainage ID	Non-Wetland WUS	Wetland WUS	CDFG Jurisdiction
A	0.015 acre	0.320 acre	0.701 acre

5.1 Segment 1

Segment 1 of Drainage A is located on the southeast corner of Cole Avenue and Lurin Avenue. It is a trapezoidal-shaped concrete-lined drainage ditch. USACE and CDFG jurisdiction was approximately four feet wide. Segment 1 receives hydrology from a culvert which originates on the opposite side of Lurin Avenue at a storm drain inlet. The bottom portion of the drainage is flat and approximately four feet wide with steeply-sloping sides. It is approximately one foot deep on the eastern, upstream end and four feet deep on the western, downstream end. There was flowing water observed during delineation fieldwork. Water flows to the west through the concrete lined ditch and into two 2-foot diameter concrete pipes beneath Cole Avenue.

Segment 1 was completely unvegetated. The bottom portion of Segment 1 exhibited wetland hydrology due to the presence of surface water (primary indicator A1). Segment 1 did not contain hydric soils since it is concrete lined. Therefore, Segment 1 was determined to not be a wetland due to a lack of hydric soils and hydric vegetation.

5.2 Segment 2

Segment 2 is located along the south side of Lurin Avenue between Cole Avenue and a residential driveway. It is a soft bottomed drainage with steeply-sloping banks approximately two feet deep. There was approximately three inches of standing water observed during delineation fieldwork. USACE jurisdiction was approximately three feet wide based on OHWM measurements and CDFG jurisdiction was approximately six feet wide based on bank to bank limits. Water continues to the west through Segment 2 and flows beneath a residential driveway through a 16-inch corrugated metal pipe (CMP).

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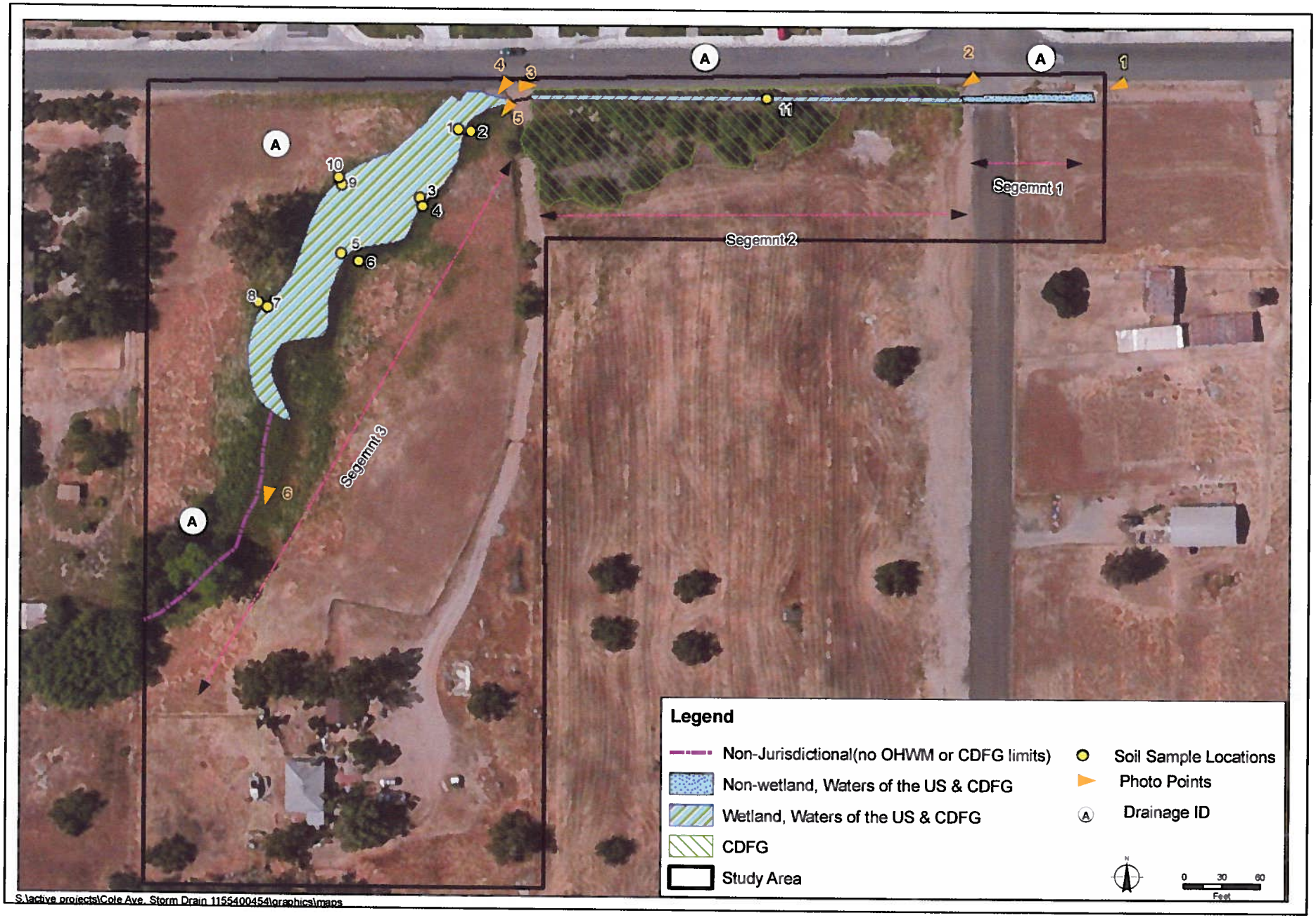

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Jurisdictional Delineation Map
Cole Avenue Storm Drain Improvement Project

FIGURE
5

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Segment 2 appears to have been recently cleared of vegetation for flood control purposes. It contains remnant cattails (*Typha* sp.). The tree layer, located on the southern bank of Segment 2 was dominated by black willow (*Salix gooddingii*) and arroyo willow (*Salix lasiolepis*).

Sampling point #11 is located near the middle of Segment 2. Segment 2 exhibited wetland hydrology due to the presence of surface water (primary indicator A1). Hydrophytic vegetation was recorded throughout Segment 2 and hydric soils were assumed to be present since it was recently disturbed and contained hydrophytic vegetation and wetland hydrology. Segment 2 was classified as wetland WUS. The extent of the adjacent riparian vegetation was identified as the limit of CDFG jurisdiction.

5.3 Segment 3

Segment 3 is located on APN 266-140-006 and the public right-of-way (ROW) directly north of this parcel along Lurin Avenue. Segment 3 receives hydrology from a concrete box culvert originating on the north side of Lurin Avenue and from a 16-inch CMP originating from Segment 2. Water was observed flowing out of the storm drain and CMP during delineation fieldwork. Segment 3 trends in a southwest direction and exits the site near the middle of the western boundary.

Segment 3 is dominated by cattails in the middle of the drainage with curly dock (*Rumex crispus*), a non-native species, near the edges. The upstream portion of Segment 3 exhibited wetland characteristics. Numerous sampling points were studied to determine the extent of the wetland. The downstream portion of Segment 3 was determined to be non-jurisdictional due to the absence of an ordinary high water mark. The wetland containing dense cattails in Segment 3 appears to substantially reduce flow velocity causing water to flow underground and likely surfaces again downstream. There was no CDFG jurisdiction south of the wetland due to a lack of streambed and bank and a lack of riparian vegetation. The trees shown on the aerial downstream of the wetland are all non-native ornamental species and do not constitute riparian vegetation.

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6.0 IMPACTS TO JURISDICTIONAL AREAS

The proposed development plan was overlaid on the jurisdictional areas to determine the extent of impacts to jurisdictional areas (Figure 6, Impact Assessment Map). There will be no direct impacts to jurisdictional areas resulting from construction of the proposed project.

6.1 Permitting Requirements

If the proposed development plan changes resulting in impacts to jurisdictional areas, authorizations from the USACE, RWQCB, and CDFG would be required prior to construction as outlined in Sections 6.1.1 through 6.1.3, below.

6.1.1 U.S. Army Corps of Engineers

The two most common types of permits issued by USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into Waters of the United States are: a nation-wide permit (NWP) or an individual permit (IP). NWPs are general permits for specific categories of activities that result in minimal impacts to aquatic resources. Nationwide permit 7 can be used for impacts resulting from outfall structures and associated intake structures. The effluent from the outfall structure must be in compliance with regulations issued under the National Pollution Discharge Elimination System Program (Section 402 of the CWA). The permittee must submit a pre-construction notification to the USACE district engineer prior to commencing the activity. The proposed project would likely qualify under NWP 7.

For project impacts that do not meet the provisions of an existing NWP, the USACE would require an IP. Individual permits require detailed analysis and compliance with the Corps formal review process. This process includes preparation of an alternatives analysis as required by Environmental Protection Agency (EPA) Section 404(b)(1) Guidelines and the National Environmental Policy Act (NEPA), and requires compliance with NEPA's environmental review process. This process provides opportunities for public notice and comment. The USACE must also comply with other federal regulations, including the federal Endangered Species Act, EPA's Section 404(b)(1) Guidelines, NEPA, and Section 106 of the National Historic Preservation Act when processing an IP.

6.1.2 Regional Water Quality Control Board

The project is within the jurisdiction of the Santa Ana RWQCB (Region 8). Under Section 401 of the CWA, the RWQCB must certify that the discharge of dredged or fill material into Waters of the United States does not violate state water quality standards.

6.1.3 California Department of Fish and Game

A 1602 Streambed Alteration Agreement is required for all activities that alter streams and lakes and their associated habitat. In addition to the formal application materials and fee, a copy of the appropriate environmental impact analysis document required for compliance with CEQA, must be included with the application.

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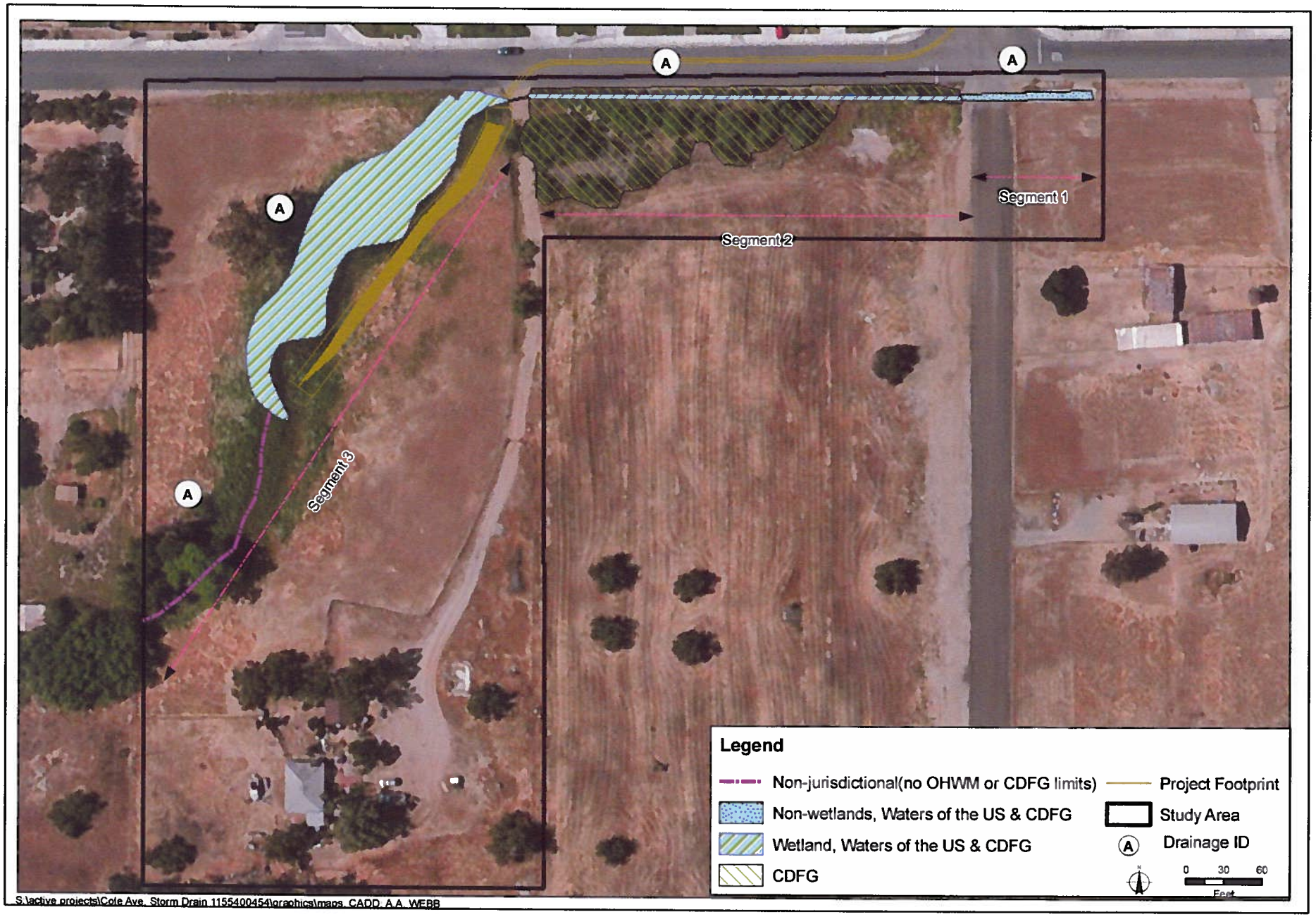

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Impact Assessment Map
Cole Avenue Storm Drain Improvement Project

FIGURE
6

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7.0 REFERENCES

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APPENDIX A

SITE PHOTOGRAPHS

Photo 1: View of concrete drainage ditch in Segment 1 facing west.

Photo 2: View of Segment 2 facing west.

Photo 3: View of project Segment 2 facing east.

Photo 4: View of existing storm drain outlet area in Segment 3.

Photo 5: View of location of proposed drainage ditch. Wetland area on right side will not be impacted.

Photo 6: Southwest-facing perspective downstream of wetland area in Segment 3 where no ordinary high water mark was observed.

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APPENDIX B

WETLAND DETERMINATION DATA FORMS

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 1

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: Long: Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 feet radius)			
1. Typha sp	50	Yes	OBL
2. Veronica anagallis-aquatica	50	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 6 inches

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 2

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: Long: Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Rumex crispus	30	Yes	FACW-
2. Cirsium vulgare	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species 30	x 2 = 60
FAC species	x 3 =
FACU species 20	x 4 = 80
UPL species	x 5 =
Column Totals: 50 (A)	140 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 3

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: Long: Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Typha sp.	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 4

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: Long: Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes X No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Rumex crispus	50	Yes	FACW-
2. Cirsium vulgare	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	80 = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 5

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Typha sp.	100	Yes	OBL
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X ____

Remarks: Contained oxidized root channels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): _____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 6

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: Long: Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Cynodon dactylon	100	Yes	FAC
2. Cirsium vulgare	60	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	160 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	160 = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species 100	x 3 =	300
FACU species 60	x 4 =	240
UPL species ____	x 5 =	____
Column Totals: 160 (A)		540 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 7

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: Fallbrook fine sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Typha sp.	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): _____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 8

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: Long: Datum: NAD 83

Soil Map Unit Name: Fallbrook fine sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Cynodon dactylon	30	Yes	FAC
2. Cirsium vulgare	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	80 = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	____	x 2 =	____
FAC species	30	x 3 =	90
FACU species	50	x 4 =	200
UPL species	____	x 5 =	____
Column Totals:	80 (A)		290 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 9

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: Fallbrook fine sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Typha sp.	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): _____

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 10

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Cynodon dactylon	100	Yes	FAC
2. Rumex crispus	20	No	FACW-
3.			
4.			
5.			
6.			
7.			
8.			
	120 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	120 = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	20	x 2 =	40
FAC species	100	x 3 =	300
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	120 (A)		340 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cole Avenue Storm Drain Improvement Project City/County: City of Riverside/Riverside County Sampling Date: 12 September 2011

Applicant/Owner: City of Riverside Public Works Department State: CA Sampling Point: 11

Investigator(s): Scot Chandler Section, Township, Range: Section 29, Township 3 South, Range 4 West

Landform (hillslope, terrace, etc.): Level topography Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 foot radius)			
1. Typha sp.	90	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10% open water % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	7.5YR 3/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
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- ___ Black Histic (A3)
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- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
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- ___ Sandy Mucky Mineral (S1)
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- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
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- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 3 inches

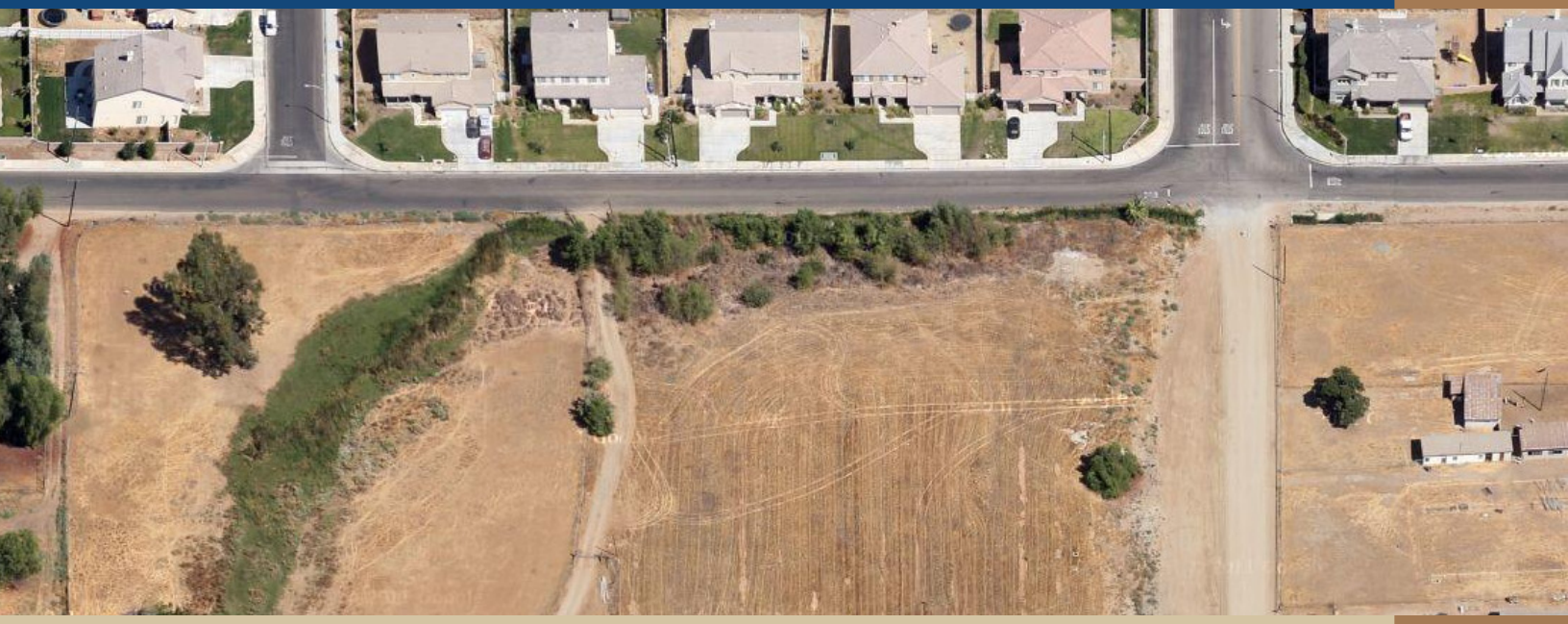
Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



ALBERT A.
WEBB
ASSOCIATES